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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

OF THE

PROVINCE OF ALBERTA

FOR THE YEAR

1939

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON:
PRINTED BY A. SHNITKA, KING'S PRINTER
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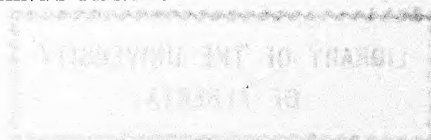
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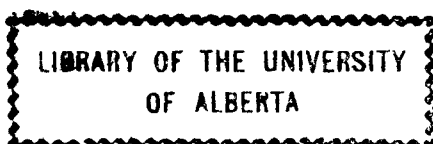
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1940





To HIS HONOUR,

J. C. BOWEN,

Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1939.

I have the honour to be, Sir,

Your obedient servant,

D. B. MULLEN,

Minister of Agriculture.

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DEPARTMENT OF AGRICULTURE

1939

HON. D. B. MULLEN, *Minister of Agriculture*

Heads of Branches

J. R. Sweeney, Deputy Minister and Superintendent of Schools of Agriculture.

P. W. Johnson, Secretary to the Department.

A. A. Campbell, Acting Live Stock Commissioner.

P. R. Talbot, V.S., Provincial Veterinarian.

D. H. McCallum, Dairy Commissioner.

O. S. Longman, Field Crops Commissioner.

C. W. Traves, Poultry Commissioner.

W. H. Wallace, Fish and Game Commissioner.

W. G. le Maistre, Provincial Apiarist.

R. M. Putnam, Director, Agricultural Extension Service.

J. Ficht, Supervisor of Agricultural Relief.

W. J. Elliott, Director of Junior Activities.

Jas. Murray, Principal, Olds School of Agriculture.

S. H. Gandier, Principal, Vermilion School of Agriculture.

REPORT OF THE DEPUTY MINISTER

THE HONOURABLE D. B. MULLEN,
Minister of Agriculture.

SIR:

I have the honour to submit herewith reports covering the various activities and branches of the Department of Agriculture for the year 1939.

In general, the year 1939 was a good year for agriculture in Alberta. Moisture conditions were satisfactory at time of seeding, and in spite of a lack of rainfall in July, Alberta harvested the fourth largest wheat crop in the history of the Province. Losses from hail damage were small. While some frost damage was reported, the area affected was not large. Unfavourable weather during harvest delayed threshing, and much damp grain was marketed in the central section of the Province where the highest yields were reported. There were 8,379,000 acres seeded to wheat, and the estimated production was 150,000,000 bushels, which was an average yield of 17.9 bushels per acre. A splendid crop of hay was harvested, while the yield of coarse grains was slightly reduced by the July drouth.

The acreage of land seeded to hay and pasture crops continues to expand, and the area devoted to forage crop seed in the Warburg and Sangudo districts shows an increase. Adequate supplies of coarse feeds were stored for live stock, and range pastures have been restored.

The usual infestation of grasshoppers occurred, and a larger area was affected. Poisoned bait was supplied as in previous years.

During the year, Bacterial Wilt and Net Necrosis caused considerable loss to the potato crop in Southern Alberta. A survey has been undertaken to ascertain the extent of these diseases, and the necessary measures to control this new pest are under consideration.

The live stock industry experienced a successful year. The improvement policies of the Department have met with a hearty response, and the exchange of scrub sires for improved type pure-bred sires, in both cattle and swine, has become one of the major activities of the Live Stock Branch.

Special attention has been directed to the swine industry. The distribution of improved bacon type boars and sows has shown remarkable results, and Alberta now leads all other provinces in the percentage of "selects" graded. There is a decided swing toward swine production.

The finishing of cattle and lambs in Alberta has been advocated vigorously, and there are now twelve feeder associations organized under The Feeder Associations Guarantee Act. Reasonable profits have been made in this new method of finishing cattle and lambs

in Alberta feed lots, and many farmers are now interested in this aspect of marketing home-grown feeds through live stock.

Lower prices for dairy products account for a slight reduction in dairy production. Alberta creamery butter was awarded a number of noteworthy prizes during the year, and occupies top place for the highest percentage of first grade butter.

The poultry industry has experienced a successful year, and the Poultry Branch has completed the licensing of poultry and egg dealers, and has continued the testing for the prevention and control of Pullorum.

There has been a large increase in the number of beekeepers registered in the Province. Seasonal conditions resulted in a lower yield of honey for 1939.

The Fish and Game Branch has become one of the most active branches of the Department. Fur farms are increasing, and much educational work has been done through instruction, field days, pelt shows, and short courses.

The distribution of fish eggs and fry for restocking lakes and streams has been continued. Additional hatchery accommodation is required to support the enlarged programme of building up additional fishing attractions for sportsmen and tourists. Funds expended in this project will be a good investment.

The Schools of Agriculture at Olds and Vermilion continue to serve a large number of rural boys and girls. Additional accommodation is required to provide for winter short courses.

The Provincial Horticultural Station at Brooks is developing rapidly. The hardy varieties tested and distributed by the Station created a new interest in the farm garden and orchard, and have stimulated the planting of trees for shelter belts and home beautification.

The Provincial Farms, operated at Olds, Vermilion and Brooks, have been re-equipped with new and improved machinery, and excellent crops were harvested. The live stock has been culled out, and new breeding stock has been added to the three farms. Sales of live stock for breeding purposes have increased 50 per cent over the previous year. The Provincial Farms are a source of new blood lines of improved stock, which can be purchased at reasonable prices.

Junior clubs continue to be the main contact with farm young people. More clubs are needed, but the supervision and leadership create a difficult problem for the Department. It will be the aim of the Department to assist in the organization of boys' and girls' clubs and obtain the help of local leaders to carry on some of the supervisory work.

The Agricultural Extension Branch has co-ordinated the extension activities of the Department, and has greatly improved the means of distributing agricultural information. This Branch supervises school fairs, exhibitions, associations, meetings, demonstrations, short courses, field days; and is also responsible for publications, agricultural statistics, women's work, and the extension activities of the District Agriculturists and Agricultural Schools.

Animal diseases such as Encephalomyelitis in horses, and various ailments of swine, caused the greatest concern to the Department during the year. The vaccination campaign, carried on to prevent another outbreak of sleeping sickness, will be continued in 1940. A Veterinary Laboratory will be opened early in the new year to assist in solving animal disease problems and reduce losses in Alberta live stock.

An Agricultural Production Committee was set up to act in an advisory capacity with respect to wartime agricultural production problems, and Sub-Committees, which include producer representatives, have been appointed to deal with field crops and swine production. If specific requests are received for increased production in Alberta, these Production Committees will aid the Department in promoting the necessary campaigns to speed up the output of food supplies.

Mr. C. A. Lyndon, Live Stock Commissioner, joined the military forces in September, and A. A. Campbell, formerly District Agriculturist at Lethbridge, is supervising feeder associations, and is Acting Live Stock Commissioner during Mr. Lyndon's absence.

It is with regret that I have to report the sudden death, on September 23rd, of Mr. H. W. Scott, District Agriculturist, Camrose. Mr. Scott was one of the oldest members of the staff in point of service, and one of the most outstanding agriculturists in the Province. His untimely passing was a shock, and his loss will be keenly felt by the Department.

Mr. S. O. Hillerud, Provincial Apiarist, was obliged to relinquish his position owing to a peculiar health ailment which developed into an allergy for bees. In giving up his work, the Province lost a capable officer, who made a fine contribution to the bee industry.

Mr. W. G. le Maistre, B.S.A., Lecturer in Apiculture at the Ontario Agricultural College, Guelph, was appointed Provincial Apiarist, succeeding Mr. Hillerud.

Mr. A. T. Sinclair, M.Sc., a graduate of the University of Alberta, joined the Department as Field Crops Specialist.

Mr. J. E. Price, M.Sc., joined the Department as District Agriculturist in the Edmonton-Edson district, and was transferred to Camrose on the death of Mr. Scott.

Mr. B. J. Whitbread, District Agriculturist, Stettler, was transferred to the new office which was opened for the Calgary district. Mr. A. J. Charnetski, of the Special Areas Board, succeeded Mr. Whitbread at Stettler; and R. J. Milligan succeeded A. A. Campbell at Lethbridge.

Mr. W. H. T. Mead, Instructor in Animal Husbandry at Olds, acted as District Agriculturist during the summer months, north of the Peace River, with headquarters at Berwyn.

The Edmonton to Lloydminster section was taken care of by the Principal and staff of the Vermilion School; while the Olds district was served by the Principal and staff of the Olds School.

The women's extension work was a feature of increasing interest to rural women, and it is essential that staff is provided to carry on the demonstrations which seem to be so much appreciated in rural districts. One of the demonstrators, Miss Edna Dakin, a

graduate in Household Economics from the University of Alberta, was retained for special work during the winter months.

The improvement policies recently introduced, and the enlarged activities in all branches of the Department, have placed a heavy strain on the staff, and I wish to acknowledge their hearty co-operation.

The heads of Branches, District Agriculturists, School Principals and Farm Managers have submitted separate and detailed reports, which are attached herewith.

All of which is respectfully submitted.

J. R. SWEENEY,
Deputy Minister.

REPORT OF THE FIELD CROPS COMMISSIONER

(O. S. LONGMAN)

The estimated crop production for Alberta for the year 1939 was the highest in its history. As indicated by the satisfactory crop yield, seasonable conditions were favourable. Throughout the southern section of the Province the spring conditions were exceptionally satisfactory, and had it not been for the lack of rainfall during the month of July, when the crop was coming into maturity, a record yield in that part of the Province would have been recorded. Due to the lack of rainfall, the south-eastern section of the Province suffered a reduction in yield. Losses from hail were comparatively light, and damage from frost, while quite severe in certain localities, was not general. Harvesting conditions were interrupted by unsatisfactory weather conditions, particularly in the central section of the Province where the heaviest crop yields obtained. Such conditions resulted in loss of yield and a reduction in grade, due to the marketing of a certain proportion of the crop with a high moisture content.

Both terminal and country elevators facilities were taxed beyond their capacity to handle the crop. This situation was aggravated by a substantial carry-over from 1938 production.

The following table indicates the crop production for Alberta for the year 1939:

Crop	Area 1939 (Acres)	Yield per Acre (Bus.)	Total Production (Bus.)	Area 1938 (Acres)	Yield per Acre (Bus.)	Total Production (Bus.)
Spring Wheat	8,379,000	17.9	150,000,000	7,969,000	17.9	143,000,000
Oats	2,706,000	30.3	82,000,000	2,885,000	35.0	101,000,000
Barley	1,114,000	24.2	27,000,000	1,125,000	26.0	29,200,000
Fall Rye	126,600	12.6	1,600,000	99,000	17.4	1,725,000
Spring Rye	62,300	12.8	800,000	59,000	16.5	975,000
All Rye	188,900	12.7	2,400,000	158,000	17.1	2,700,000
Peas	900	21.0	18,900	800	27.5	22,000
Beans	800	18.0	14,400	700	16.7	12,000
Mixed Grains	23,200	24.0	556,800	19,100	25.1	480,000
Flaxseed	40,000	8.5	340,000	31,000	8.1	250,000
		(Cwt.)	(Cwt.)		(Cwt.)	(Cwt.)
Potatoes	25,400	48.0	1,219,200	28,200	74.0	2,087,000
Turnips, etc.	2,700	100.0	270,000	2,700	107.0	289,000
		(Tons)	(Tons)		(Tons)	(Tons)
Sugar Beets	21,551	12.0	258,612	19,700	12.74	251,000
Grain Hay	1,100,000	1.50	1,650,000	900,000	1.75	1,575,000

The acreage of farm land devoted to hay and pasture crop continues to increase. During 1939 a substantial increase in legume crops, particularly alfalfa, was evidenced. Due to the satisfactory yield of seed obtained in 1938, considerable interest has been aroused in the production of these crops for seed purposes. Unfortunately, however, the 1939 season was unfavourable, which resulted in disappointing yields and revenue from this source.

The uncertainty of seed setting with respect to alfalfa crops is a matter which is receiving careful consideration. While it is desirable to encourage the production of satisfactory supplies of forage crop seed, both for domestic and export purposes, it has to be borne in mind that the permanency of this form of agricultural production will depend upon its co-ordination with some form of live stock production, as the utilization of the crop for either fodder or seed purposes is assured.

A reasonable price for forage crop seed and grass seed has prevailed. However, there has been an increased production of grass seed which has had a tendency to depress prices. In the case of Crested Wheat Grass there has been an increased production of this seed, resulting in the lowering of price and a much wider distribution and utilization of this grass.

WEED CONTROL

The Noxious Weeds Act was enforced by seven fieldmen who supervised weed control in municipalities, and twenty-one inspectors appointed to enforce the Act in improvement districts.

Although special attention has been given to weed control and eradication for many years, it is apparent that perennial Sow Thistle, Canada Thistle and some of the newly introduced perennials are on the increase. Supervisors report that these new weeds, namely, Hoary Cress, Leafy Spurge, Field Bindweed and Russian Knapweed have been located at many points. It appears that in many cases these weeds are not known to the farmers until they have spread over the farm.

A number of municipalities fail to appropriate sufficient funds to employ satisfactory weed inspectors. In the majority of improvement districts no funds are available for weed inspection. The Government made a special grant for employing weed inspectors in newly settled districts.

Meetings for weed inspectors, municipal councillors and farmers were held at eight central points. These meetings were well attended, and it is felt that greater efficiency was obtained in the enforcement of The Weed Act through these gatherings.

Chemical was supplied to districts where Hoary Cress, Leafy Spurge and Russian Knapweed were newly located.

Cultural experiments were conducted on Hoary Cress in order to discover the best methods to handle this weed. It will not be known until the growing season of 1940 as to the efficiency of various methods.

An extensive educational programme was inaugurated, as it is felt that many farmers are unable to identify newly introduced weeds, nor are they conversant with the best methods of eradication.

SUMMARY OF DATA ON WEED WORK

Number of Field Supervisors	7
Number of Improvement District Inspectors	21
Number of Municipal Weed Inspectors	348
Number of Improvement Districts supervised	94
Number of Municipal Districts supervised	145

GRASSHOPPER CONTROL CAMPAIGN

Compared with last year the 1939 grasshopper infested area was larger by approximately 2,000,000 acres. Due to cool weather in the spring and early summer, infestations did not assume as serious proportions as the previous year. Hatching of grasshopper eggs was very slow and uneven and infestations were spotty, especially in the northern part of the area. Adequate supplies of bait were supplied to the various districts according to the demand. During the latter part of July and most of August, flights of grasshoppers migrated from across the International Boundary into a large area in the south-eastern section of the Province, caused considerable crop damage. Satisfactory control, however, was effected by the

spreading of poison bait, which resulted in the protection of considerable crop where the yield was promising. However, where the crop was of questionable value, there was no inclination on the part of the farmers to take the necessary precautions to control the pest.

During the past year four central mixing stations were operated in an attempt to reduce the cost of poison bait. Feed flour was first used on an extensive scale instead of bran. Bran was used at the usual rate of one to three parts of sawdust, while flour was used at the rate of one to thirteen of sawdust, making a considerable saving in the cost of material. The central stations mixed dry bait as well as wet. The dry bait weighed approximately 50% the weight of wet bait of the same volume, consequently a substantial reduction in transportation costs was realized.

Central mixing stations mixed cheaper, due to the fact that the greater volume of bait produced, thereby lowering the cost per ton of mixed bait. Dry bait has certain advantages in that it can be stored indefinitely, and a supply can be mixed so that bait is available at all times to be shipped where it is most needed. On the farmer receiving the bait, all that is necessary is to add the water. The correct moisture content is reached when the bait is ready to be spread. The concensus of opinion among municipal officials is that this type of bait is more economical and is as effective or better than the wet bait.

The following is a summary of the campaign for the years 1938 and 1939:

	1938	1939
Acres of land in area	27,000,000	29,500,000
Acres of crop land menaced	5,255,642	2,670,838
Number of stations in operation	140	88
Amount of poison bait spread, lbs.	28,753,457	16,444,573 (Dry)
Number of farmers receiving bait	10,613	8,025
Estimated damage	3%	6.9%
Estimated crop saved	19%	26.4%
Bait used:		
Sawdust, lbs.	15,101,560	17,260,740
Bran, lbs.	2,675,306	1,126,890
Feed Flour, lbs.		1,260,225
Shorts, lbs.		29,300
Middlings, lbs.		28,000
Sodium Arsenite, lbs.	24,730	13,402
Sodium Fluosilicate, lbs.	235,340	358,090

Each year it becomes more and more evident that systematic methods of control for grasshoppers and other insect pests will have to be adopted if damage from these sources is to be reduced. Much of the infestation occurred on range and abandoned land, and it appears advisable that a policy be inaugurated whereby ranchers and farmers in extreme drought areas participate to a greater degree in the controlling of infestations within these areas. It is from such areas that a number of our infestations arise, and it is essential that control measures be established at an early period of the cycle.

Wheat Stem Sawfly.

The infestation of this insect extended from the eastern border of the Province, and did material damage to the wheat crop over a wide area extending into the central section of the Province. The loss on lands cropped by strip farming has been reported as most serious. This is possibly one of the most serious insect pests with which our agricultural communities are afflicted, and the damage from this cause seems to be increasing gradually. During the past year the Entomological Branches of the Dominion Govern-

ment have reported very successful results in controlling this pest by the use of trap crops. It is hoped this method of control will be extended during the coming year.

Pale Western Cutworm.

A certain amount of damage throughout the prairie section of the Province was reported as the result of infestation of Pale Western Cutworm, the control of which presents a difficult problem, and those in charge of research and investigational work continue to devise ways and means whereby the pest may be combatted. While considerable damage has been done during the past few years, the prospect of a serious infestation for 1940 is not in evidence. Very little damage from this cause during the next year, is expected.

Red-Backed Cutworm.

During the early part of the season a very serious outbreak of Red-backed Cutworm was reported in the Peace River area, particularly in the Grande Prairie district, also at various other points through the north-central portion of the Province. In the Grande Prairie district very satisfactory results were obtained by way of controlling this pest with the use of fluosilicate poison. However, we are pleased to advise that during 1940 no serious outbreak is anticipated, and therefore, we should not experience as heavy a loss as last season.

Say's Grain Bug.

The area infected by this pest continues to increase, and serious damage to crop has been reported in certain instances. This pest attacks the wheat kernel when in the milk and dough stage, and where infestation is severe a serious reduction in crop yield may occur. Investigations reveal that trash covers, plowless summer-fallows and lands covered with Russian Thistle form favourable breeding places for this pest. It should be pointed out that abandoned land infested with Russian Thistle forms a breeding centre for the Say's Bug from which they migrate to adjacent farms where damage is done. This is a comparatively new pest in Alberta, and its development over a wider area is beginning to give us much concern.

Psyllid Infestation.

This pest is particularly destructive to potato and tomato crops. Heretofore it was considered that the main source of infestation arose from greenhouses, and there has been some doubt if it is possible for this insect to survive the Alberta winter. However, during the past year or two, the distribution of the pest indicates it may be possible for it to survive outside of greenhouse conditions. Recent investigations made in connection with Net Necrosis, which has caused considerable damage to the potato crop and resulted in loss to the farmers, indicate this potato disease is associated with the psyllid infestation. It is, therefore, our intention to pursue by inspection of greenhouses and any other practical control measures in an effort to limit the distribution of this pest.

Potato Diseases.

During the past year considerable loss occurred to the potato crop in the southern section of the Province as the result of Net

Necrosis and Bacterial Wilt. In order to combat the ravages of this disease pest, the assistance of the Dominion Plant Pathology Laboratory, University of Alberta, and Dr. A. W. Henry of the University, was procured. During the summer months experimental and research work was conducted with a view to determining the cause. In view of the serious outbreak of the diseases and the necessity of controlling the distribution of infected stock, it was decided to segregate certain areas of the Province for the purpose of controlling distribution of potato stocks produced within the area and the encouraging of farmers to take such measures as will tend to reduce loss from this disease. Therefore, an Order in Council was passed segregating the following areas under The Pests Act:

All of Townships 8 and 9, Range 21, West of the 4th.
Sections 31, 32 and 33, in Township 8, Range 20, West of the 4th.
All of Township 9, Range 20, West of the 4th.
All of Township 9, Range 22, West of the 4th.
All of Townships 9 and 10, Range 16, West of the 4th.
All of Township 9, Range 17, West of the 4th.
All of Township 6, Range 20, West of the 4th.
All of Townships 13, 14 and 15, Range 17, West of the 4th.
All of Township 14, Range 16, West of the 4th.

In order to determine the distribution of Bacterial Wilt and the possibility of infestation taking place beyond the areas which were segregated, a survey was conducted, and approximately 700 farms were visited. Potato crops examined by qualified observers, and it is largely upon the result of this survey and experimental work conducted during the summer that control measures were established.

The seriousness of the infestation of Bacterial Wilt to the potato crop cannot be over-estimated. Certain sections of Canada at the present time are experiencing heavy losses from this disease, and it is hoped that by educational and reasonable measures of control, losses from this cause may be maintained at a minimum. It would appear that one of the precautionary steps which should be taken is the production of disease-free seed in areas far removed from the infested areas. This is a policy which has been followed elsewhere, and it would appear it might be followed in Alberta as a practical means of disease control with respect to the potato crop.

FORAGE CROP PROGRAMME

The acreage of legumes and grasses is increasing rapidly in the Province. In the mixed farming districts, many farmers have found alfalfa to be a valuable crop, and clovers in northern and western districts are proving to be productive and an economical source of food supply.

It is generally conceded that forage crops are essential as a means of controlling weeds. Every effort has been made to promote the growing of more alfalfa, timothy, brome grass and clovers in the mixed farming districts, and crested wheat in plains areas, with the double purpose of increasing yields and controlling weeds.

The Dominion-Provincial Forage Crop Seed Distribution Policy was continued in 1939. There is no doubt that many farmers have commenced to seed down land to forage crops through the inducement of obtaining seed at half-price. The municipalities co-operate in this programme by supplementing one-half of the moneys collected. The programme for the past three years is summarized as follows:

Year	No. of Municipalities or Improvement Districts	No. of Municipalities undertaking Programme by years	Seed Distributed	No. of Farmers Participating
1937	16	16	85,695 lbs.	2,457
1938	45	29	173,567 lbs.	2,174
1939	67	22	222,800 lbs.	3,415
		67	482,062 lbs.	8,046



Alsike and Timothy, a popular Forage Crop Mixture

Alberta seed growers are producing forage crop seed in increasing quantities each year. Large shipments were exported in 1939 to United States, Germany and Russia, as well as Eastern Canada.

JUNIOR GRAIN CLUBS

Excellent work has again been accomplished by Junior Grain Clubs in introducing and multiplying pure seed of suitable varieties. Eighty-four districts were served this year throughout the Province. Club members have demonstrated the superior value of registered and certified seed over common seed ordinarily used on hundreds of farms. These young farmers have learned the technique of successfully handling a seed plot, and have demonstrated a practicable method of providing superior seed for use for the farm and community. Where older farmers, handicapped by lack of technical knowledge were reluctant in using registered seed, junior farmers with their natural enthusiasm and curiosity have made remarkable progress.

The 1939 records show an increase of eight clubs over that of 1938. Each member when joining a club received seed as follows: wheat $4\frac{1}{2}$ bushels, oats 8 bushels, barley 6 bushels. This seed is multiplied under the direction of Departmental supervisors. It is amazing how rapidly seed grain may be increased. Crop reports from the individual club members reveal that fully 150,000 bushels of superior seed were produced this year from their three acre specially cared for seed plots, while millions of bushels were pro-

duced from larger fields descending directly from the original registered seed acquired by the members. It is estimated that each year well over half a million bushels of pure-to-variety seed is used as a result of the operation of Junior Grain Clubs. The general desire of farmers last year in many districts to change from Garnet Wheat to some other variety has been met in a most satisfactory manner through the operation of these clubs.

Grain clubs and memberships in 1939 in the various projects were as follows:

Wheat	74 clubs with	1,260 members
Barley	7 clubs with	98 members
Oats	23 clubs with	296 members
Flax	1 club with	9 members
Total	105 clubs with	1,663 members

There were 105 standing crop competitions and eighty-four local club seed fairs and grain judging competitions held. They were keenly contested and splendid results were obtained.

Grain clubs were sponsored again this year by the following organizations: Wheat Clubs, Alberta Wheat Pool; Oat Clubs, United Grain Growers, Limited; Barley Clubs, Canada Malting Company; Flax Clubs, Alberta Linseed Oil Company. The support given by these organizations in the matter of paying part of the cost of the seed and providing prizes and free trips for the member obtaining the highest score for his season's work has been of great value in stimulating effort and maintaining interest in the work. Over 100 club members were awarded free trips to district seed fairs with Agricultural Short Courses held at Lethbridge, Calgary and Edmonton. In lieu of free trips to the usual National Grain Judging Competition at the Royal Winter Fair, Toronto, which was cancelled this year, it was arranged to offer scholarships towards a course at one of the Schools of Agriculture. These scholarships were awarded to the winners of the Alberta Provincial Grain Judging Competition, viz., Stanley Gould and Robert Woods, both of the Ohaton Wheat Club.

Junior club members are each year coming more and more to the fore in awards at the various seed fairs and grain shows. In the Alberta Provincial Seed Fair, Wm. Justyn Rigby, Wembley, won highest honours in wheat in the Commercial Division, and F. Lloyd Rigby won the primary award in oats. In the class for the best exhibits of malting barley, Eli Lastiwka, Willingdon, won second, while other junior club members won fourth, fifth and sixth. George Dugger, Andrew, won the award for the best sample of barley exhibited by a junior club member, James Sebastian, Wembley, for the best sample of wheat exhibited by a junior club member, and F. Lloyd, Rigby, Wembley, won the award for the best sample of oats exhibited by a junior grain club member.

At the Grain and Hay Show, Chicago, for the second time in succession, Alberta Junior Club members won World's Championships in both wheat and oats. F. Lloyd Rigby, Wembley, was crowned World's Wheat King for the second time, and Wm. Skladan, Andrew, as World's Oat King, while Eli Lastiwka, Willingdon, won first, and J. J. Fedorak, Willingdon, won third in six-rowed barley. These top winnings were well supported with many other awards by their fellow club members at this great show. Out of a total Alberta winnings of 39 in wheat, oats and barley, 26 were won by junior club members.

SEED SHOWS

During the winter of 1938-39 three district seed shows were held at Edmonton, Lethbridge and Calgary. The Provincial competition was held in connection with the Calgary fair. The purpose of the district shows is to bring the shows as close as possible to the people, and thus create more local interest in improved seed production. In addition to seed fairs serving as a medium for the distribution and sale of superior seed, they also serve in forming high standards towards which farmers may strive in producing high quality commercial grain.

There was an increase of 173 entries in 1939 over those of 1938. The entries with respect to the foregoing shows as compared with the previous year were as follows:

	1938	1939
Edmonton	175	242
Lethbridge	119	151
Calgary	54	128
Totals	348	521

The Royal Winter Fair, Toronto, was cancelled this year. The usual assistance was given in assembling and transporting exhibits to the Hay and Grain Show, Chicago. The following table represents the number of entries and winnings at the Chicago Show for the year 1938 and 1939:

	1938	1939
Number of entries	56	81
Number of prizes won	44	48
Number of Championships	2	3

An outstanding feature of the winnings from this Province was the large number of awards won by junior farmer exhibitors. Two championships and 28 other awards went to exhibits from junior grain club members. Alberta exhibitors won 8 of the first 12 awards in hard red spring wheat, 12 of the first 13 awards in white oats, and 6 of the first 7 in six-rowed barley.

The following World Championships were won: Wheat, F. Lloyd Rigby, Wembley; Oats, Wm. Skladan, Andrew; Beans, John Hamilton, Coaldale.

The Alberta Department of Agriculture provided assistance to seed growers of the Province exhibiting at the International Grain and Hay Show, Chicago, on the following basis: Shipping costs to and from Chicago were paid on all approved exhibits. Prize money won on exhibits was duplicated, not exceeding an amount of \$5.00 for each winning. Exhibitors winning one or more first prizes or championships were paid a special honorarium of \$25.00 in addition to duplication of first prize money. Such honorarium was increased to \$75.00 for championships in wheat, oats and barley.

SEED DISTRIBUTION POLICY

Under this policy field inspected seed is available to grain growers at any point in the Province where sufficient orders are received for a car lot. The Dominion Government policy of freight assistance permits the seed to be laid down at the destination at a very low price. Grain companies handled, weighed and recorded all deliveries. In addition, they accepted grain in exchange for seed at a premium of one and a half cents per bushel.

In spite of this assistance and considerable publicity, less seed was moved under this policy than previously. The shipments were

7,080 bushels of wheat and 8,719 bushels of oats. Six hundred and seventy growers obtained seed under this programme.

The Dominion Government also paid the freight under certain conditions on registered and certified seed sealed in sacks. There were 61,896 bushels of seed moved under this arrangement.

A bin-to-farmers policy was inaugurated for the first time this year. Owing to the large quantity of field inspected seed produced, it was felt that it would not all be sold as registered or certified, hence many growers agreed to sell from their bins at a slight premium over commercial grain prices. Approximately 125,000 bushels were handled in this way to the benefit of those who obtained it.

DISTRICT SEED CLEANERS

During the past eight years district seed cleaners have been located at the following points in the Province: Fairview, Grand Prairie, Lacombe, South Edmonton, Sangudo, Vegreville, Camrose, Berwyn, Gage, Innisfail and Warburg. Two other assemblies which are now under construction will be placed early in the new year.

These cleaners are mostly equipped for cleaning both cereal and forage crop seed. They are proving valuable for processing seed for the market, as well as cleaning farmers' grain for seed purposes. The assemblies cost approximately \$1,800 each, of which amount the local seed cleaner association repays out of revenue over a period of years, one-third of the cost. The Dominion Government provides through its subvention policy an amount not exceeding \$600 for each cleaner placed under agreed arrangements.

ALBERTA SEED GROWERS' ASSOCIATION

Registered and certified seed growers are members of this association. As the growers' marketing association, it co-operates closely with the Field Crops Branch in arranging sales of pure-to-variety seed.

Price lists were published in the spring listing growers who had seed for sale. In this way grain farmers requiring a change of seed have information as to the closest available supply of pure seed. The use of such improved seed is important in raising the quantity and quality of the commercial grain produced in the Province.

The officers of the association during 1939 were; H. P. Wright, President; T. H. Howes, Millet, Vice-President; Directors: Messrs. A. M. Smith, R. Mueller, H. G. Houlton, F. T. Rickett, O. S. Longman, E. H. Buckingham (Secretary-Treasurer), of Wembley, Ghost Pine Creek, Lethbridge and Edmonton, respectively.

ALBERTA CERTIFIED SEED POTATO GROWERS' ASSOCIATION

The members of this association are concerned with production and marketing of certified potato seed. It co-operates with the Field Crops Branch in promoting the distribution of improved potato seed.

The annual meeting was held on the farm of the Oliver Mental Institute. Mr. J. Tucker, Chief Potato Inspector for Canada, was the guest speaker.

The officers for 1939 were as follows: President, W. L. Ingraham, Lacombe; Vice-President, F. T. Rickett, South Edmonton; Directors: A. W. McIntyre, South Edmonton; T. Mollineaux, Ed-

monton; Chas. Scott, Warburg; L. Silver, Perryvale; T. H. Howes, Millet.

THE ALBERTA CROP IMPROVEMENT ASSOCIATION

Due to the major position occupied by cereal production in the agricultural programme of Western Canada, and particularly in Alberta, it is evident that the maintenance of quality in these crops is essential. Governmental, producers and grain companies have been vitally concerned with the quality and the disposition of these crops. In order to secure unity of endeavour from these various organizations, the Alberta Crop Improvement Association was instituted for the purpose of endeavouring, through a co-ordinating committee consisting of representatives of the aforementioned organizations, to bring about in the Province of Alberta, wider distribution of improved seed, and by other means to improve the quality of Alberta cereal crops.

This organization is directed by a co-ordinating committee composed of representatives of the following organizations: Plant Production Services (Seed Branch, Dominion Department of Agriculture, Calgary); Provincial Department of Agriculture, Edmonton; University of Alberta; Alberta Seed Growers' Association; Canadian Seed Growers' Association (Alberta Branch); Line Elevator Companies; Farmer Owned Elevator Companies.

The responsibilities of the participating organizations may be defined as follows:

Dominion Provincial Departments of Agriculture, Provincial University, The Canadian Seed Growers' Association: The conducting of research, education and inspection and promotional work, and the obtaining of information in collaboration with other participating agencies.

Registered Seed Growers, represented by the Alberta Seed Growers' Association: Their responsibilities are to maintain production of registered and certified seed in quantities sufficient to meet reasonable requirements; to collaborate with the grain trade in establishing the prices of registered and certified seed and arranging ways and means for the disposal of same; to prepare price lists and catalogues and provide the necessary information to assist in the disposal of registered and certified seed.

The Elevator Companies: To act and be advertised as the authorized distributors of seed for the Alberta Seed Growers' Association, and through the utilization of their office and staff to act as an intermediary between the association and prospective purchasers.

REPORT OF THE LIVE STOCK BRANCH

(C. A. LYNDON, A. A. CAMPBELL)

The Live Stock Branch experienced during 1939 an exceptionally busy year, the great amount of activity in the Branch reflecting the growing interest throughout the Province in live stock production and improvement. The interest shown by live stock producers and their organizations in the policies supervised by the Branch was most gratifying, serving as it did as an indication of increased interest in the establishment of the industry in the Province on the soundest possible basis economically.

The impetus of live stock improvement work was retarded somewhat by the low cash returns received by agricultural producers generally in the Prairie Provinces. Both wheat and coarse grain crop returns were unsatisfactory, and left little or no surplus for stock purchases. This was noticeable in both cattle and horse improvement, where scores of interested parties were forced to postpone their intended moves toward improvement solely through lack of the necessary funds.

The work was further impeded by the outbreak of war, this circumstance tending to slow up agricultural policies until such time as it became possible to determine how Provincial agricultural work might best be fitted into the national war-time economy.

Feed conditions were very satisfactory in the Province following a dry period that threatened to become widely prevalent in the late spring and early summer. This temporary drought, while it reduced hay crops by as much as 40% to 50% in some areas and also reduced tonnage of green feed crops considerably, was not serious enough to call for re-adjustment of stock holdings. An unusually fine, open fall season more than offset this effect in most areas by reducing the amount of feed required in the early months of the winter of 1939-40.

The statistics and records of the several branches of the industry will serve to indicate the progress made during the year.

CATTLE

The year 1939 will be acknowledged by most cattlemen in the Province to have been somewhat more satisfactory, both from a market and price standpoint, than 1938, though there were still one or two periods during which returns were obviously not sufficient to permit proper carrying on of production business.

Prices for finished cattle started off on a satisfactory level in the early months of the year, aided materially by the market made available through the American cattle quota. Feeders which went into the lots at the low prices prevailing in the fall of 1938 were turned off at satisfactory levels. The fall prices opened less favourably, the Canadian market reflecting the reaction of American markets to a period of business recession and uncertainty, and to a measure of maladjustment between the price housewives were paying for beef and for other foodstuffs. However, those in the Province who were able to withhold stock from the market as a result of the fine "open" fall, sold on a firmer market, the year

closing with prices on good steers up as much as one dollar per hundred over the same period in 1938.

Total cattle marketings in Alberta for the year were 248,748 head, as compared with a final figure of 264,505 for 1938, and a decrease of approximately 6.33%.

The following figures from the Dominion Department of Agriculture provide an interesting picture of the trend of cattle marketings in Alberta for the past six years:

1934	183,519	1937	311,506
1935	257,782	1938	264,505
1936	363,811	1939	248,748

Sales of cattle direct to packers in the Province for fifty-two weeks of the year, were 46,530 head, or a decrease of 2.59% under 1938.

Sales of cattle on public yards in the Province were 117,119 head, or a decrease of 7.48% compared with 1938.

Calf sales for the year decreased 514 head, sales direct to packers being up about 1% and those on public yards showing a decrease of 10.41% when compared with 1938.

The destination of cattle shipped out of the Province during 1939 was as follows:

To British Columbia	65,235
To Saskatchewan	6,465
To Manitoba	21,612
To Ontario	20,871
To Quebec	14,123
To Nova Scotia	11
To New Brunswick	
To Great Britain	
To Prince Edward Island	
To United States	61,884
Total	190,201

The American cattle quota, allotted to Canada under the United States-Canadian Tariff Agreement, had the marked effect anticipated in the report last year of greatly increasing our beef cattle exports to American markets. The following table shows the trend of Alberta cattle exports to the United States for the past four years:

To United States:			
1936	81,785	1938	38,185
1937	75,205	1939	61,884

The renewal of the quota for 1940 will doubtless continue to strengthen Alberta and Canadian markets, but it is doubtful if there will be any marked increase during 1940 in the number of cattle shipped to southern markets.

THE PURE-BRED SALES

The more satisfactory market for cattle during the year was reflected in the interest shown in the major pure-bred cattle sales at Calgary, Edmonton and Lacombe. The extent of these sales as reflectors of conditions in the industry may be gathered from the following comparison of sales results for 1938 and 1939:

	1938		1939	
	No. Sold	Ave. Price	No. Sold	Ave. Price
Shorthorns	96	\$129.58	146	\$169.90
Aberdeen-Angus	50	109.20	49	166.73
Herefords	288	156.70	247	230.00
Totals	434	\$145.23	442	\$203.14

EDMONTON BULL SALE				
Shorthorns	66	\$109.09	56	\$131.07
Aberdeen-Angus	24	86.87	24	86.25
Herefords	25	107.60	13	143.84
Totals	115	\$104.13	93	\$121.18

LACOMBE BULL SALE				
Shorthorns	56	\$ 77.23	20	\$142.25
Aberdeen-Angus	14	101.07	14	123.57
Herefords	32	113.75	29	138.80
Totals	102	\$ 92.35	63	\$136.50

Hogs

The swine industry of Alberta continues to hold an exceedingly important place in the Provincial live stock picture. Marketings in 1939 have shown an increase in both quality and quantity. This industry is returning to the producers within this Province annually from fourteen million to sixteen million dollars. It may be interesting to note that nearly three-quarters of the swine being marketed are grown from Red Deer north.

Reports reaching the Live Stock Branch show a distinct increase in the number of sows being bred. Low grain prices, coupled with a somewhat stationary hog price throughout the year, have been pleasing to the producer. The recently announced quota and the assurance of a steady price level for bacon exports to Great Britain have become a decided stimulant to the swine business.

The hog producer has the opportunity of firmly establishing himself on the British market due to the fact that during the war supplies from European countries will be largely replaced by the Canadian product. If proper attention is given to seasonable marketings and improvement in quality, Alberta may play a very important role in the swine picture of the ensuing year.

Alberta has become the second largest hog producing Province in the Dominion, and also is very close to Ontario in the quality of the product marketed. During 1939, this Province marketed a total of 979,898 hogs as compared to 782,857 hogs in the previous year. This is an increase in marketings of 196,041 hogs, or 25.16%.

With the increase in the number of hogs being marketed, it is distinctly pleasing to note that the improvement in quality continues. The percentage of "select" hogs has increased from 5.54% in 1929 to over 32% in 1939, while the basic grade "bacon" during the same period has increased from 15% to over 41%. Although rail grading is still voluntary in this Province, nearly 40% of the hogs marketed are sold on this basis; 80% of the rail graded hogs are in the two top grades. It is essential that the hog producer and the Live Stock Branch, in stressing this point, make every effort to lessen the percentage of hogs being marketed in other grades, as nearly two-thirds of our marketings still fall short of the top grade.

Pure-bred sales were again held in Calgary and Edmonton, as well as an Old Country Community Sale at Lacombe. Pure-bred swine to the number of 129 head were sold at Edmonton, as compared with 54 head the previous year, and the average price received was only slightly lower, despite the increased offerings. In Calgary, 196 head, compared to 132 in the year previous, were offered for sale, and the average price was over \$45.00, compared to \$36.00 in 1938. Below is a tabulated summary of the sales for 1937, 1938 and 1939:

DEPARTMENT OF AGRICULTURE

EDMONTON SWINE SALES

Breed	1937		1938		1939	
	No. Sold	Ave. Price	No. Sold	Ave. Price	No. Sold	Ave. Price
Yorkshire Sows	20	\$ 23.85	19	\$ 30.68	43	\$ 28.18
Tamworth Sows	9	25.44	7	25.00	2	25.00
Yorkshire Boars	42	28.34	23	41.56	79	31.43
Tamworth Boars	4	21.75	4	32.00	3	17.70
Yorkshire Bred Sows			1	47.00	2	47.50
Totals	75	\$ 26.44	54	\$ 34.98	129	\$ 30.18

CALGARY SWINE SALES

Tamworth Sows			3	\$ 27.66	7	\$ 33.33
Yorkshire Sows	26	\$ 28.62	63	27.80	56	37.69
Berkshire Sows	2	21.50	6	27.17	3	29.17
Tamworth Boars	4	31.50	6	45.50	16	55.00
Yorkshire Boars	44	25.16	50	48.39	106	49.41
Berkshire Boars			4	32.25	8	44.06
Totals	76	\$ 26.58	132	\$ 36.50	196	\$ 45.41

HORSES

Beyond question, the most noteworthy feature of the Alberta horse situation at the present time is the attention which the breeders are devoting to type and quality.

Being well aware of the present day competition which the tractor and truck have established in agricultural and industrial power, and also that the Province of Quebec, demanding a specific type of farm horse, has in past years been one of our best markets for our export surplus, breeders are giving very careful study to what constitutes the most saleable horse. The maintenance of a remunerative market for our exportable surplus horses has to a considerable extent been the result of such endeavour.

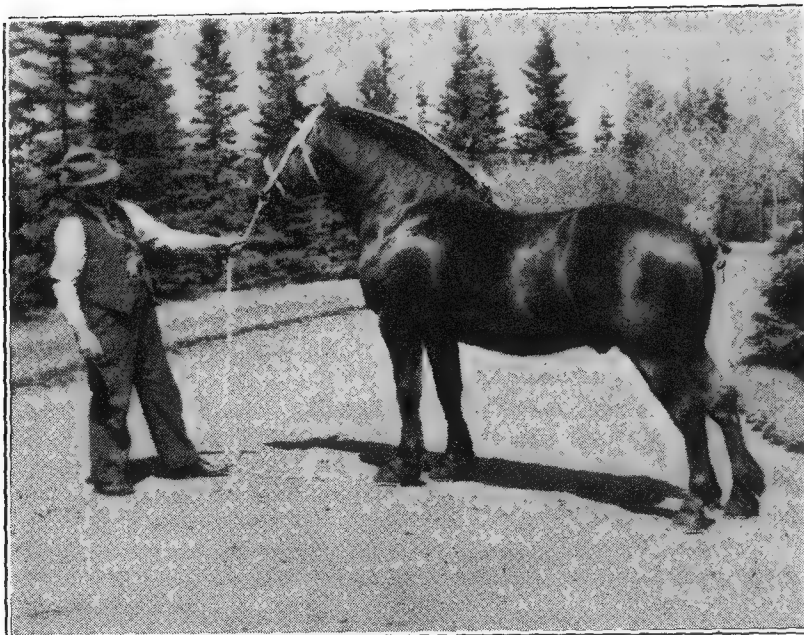
The Co-operative Stallion Policy sponsored by the Department of Agriculture has in no small way been responsible for maintaining, and in many districts improving, the standard of quality of horses, as under that policy improved stallions are made available at a minimum cost to farmers. It has also provided an important market for stallions from pure-bred breeders within the Province, as practically all of the 134 stallions procured by clubs under this policy were purchased from Alberta breeders. The average purchase price of these stallions has been \$575.00. This policy is being continued during the coming year.

The following is a summary of Co-operative Stallion Clubs organized to date:

Year	No. Clubs
1935	16
1936	18
1937	27
1938	40
1939	39

It will be noted that in spite of adverse financial conditions in Northern Alberta, due to low prices for coarse grains and to drought conditions over a considerable portion of that area in 1938, the interest in this policy was maintained.

It is becoming more generally realized that from year to year horses for export sale should be properly fitted in order that they may be sold to the best advantage. Annual spring sales being held at various points throughout the Province have definitely proven the most popular and efficient means of disposing of the export surplus. At these sales, horses are better fitted and a more competitive market established. The publicity given such sales is responsible for attracting buyers from all parts of the Continent each year.



Olds Perlaet 16172, raised at Olds School of Agriculture.

An increasing number of such sales are being held yearly. Last spring, sales were held at the following points: Lacombe, Red Deer, Ponoka, Calgary, High River, Stettler, Hanna, Lethbridge, Grande Prairie, and Medicine, all of which were successful, both in numbers of horses sold and in average prices obtained.

The Lacombe sale, having developed into one of the largest of its kind on the Continent, had an all-time record in 1939, as shown by the following table:

LACOMBE HORSE SALE			
Year	No. Sold	Toa. Sale Value	Av. Per Head
1930	357	\$16,569.86	\$46.52
1931	605	33,465.00	55.31
1932	386	22,967.50	59.50
1933	187	10,328.00	55.23
1934	203	13,764.50	67.80
1935	366	25,110.50	68.60
1936	308	25,830.25	83.86
1937	540	50,712.00	93.91
1938	684	57,540.00	84.10
1939	1,005	79,515.60	79.12

The following are the figures for 1938 and 1939, showing the total exports of horses from the Province of Alberta:

EXPORT OF HORSES FROM ALBERTA		
	1938	1939
To British Columbia	785	168
To Saskatchewan	2,167	720
To Manitoba	607	372
To Ontario	3,328	1,756
To Quebec	11,372	10,108
To Nova Scotia	510	755
To New Brunswick	622	737
To Prince Edward Island	199	158
To United States	600	652
To Newfoundland	20	
To North West Territories	4	
Total	20,214	15,426

SHEEP

The total volume of sheep and lambs marketed at the Calgary and Edmonton Stockyards during the past three years was as follows:

Year	Volume	Value
1937	27,696	\$146,725.00
1938	28,171	156,851.00
1939 (estimated)	27,388	152,300.00

This, however, is not a true picture, even when the additional 69,000 sheep and lambs are added which were marketed direct to plants in 1939.

Alberta produced 25% of the total sheep and lambs grown in the Dominion of Canada in 1937, 27% in 1938, and it is estimated it will go over 30% in 1939.

In 1937, Alberta produced 199,605 sheep and lambs out of a total of 798,478 head in the Dominion; in 1938, 219,559 out of a frand total of 758,587; and this year the Alberta total is estimated to be 248,157 out of a possible total of 823,887 sheep and lambs grown in the Dominion.

Prices on the Edmonton and Calgary markets were very similar to those of last year. A keen demand existed for good feeding lambs at weaning time, a demand that quickly absorbed all available supplies at a full cent a pound advance in price, leaving many prospective feeders without lambs in their lots.

Below is a summary of the 1937, 1938 and 1939 pure-bred sheep sales held in the Province:

Breed	1937		1938		1939	
	No Sold	Ave. Price	No Sold	Ave. Price	No Sold	Ave. Price
EDMONTON:						
Suffolk Ewes	10	\$ 16.20	39	\$ 9.19	6	\$ 20.21
Oxford Ewes	6	6.50	5	6.30	10	7.65
Shropshire Ewes					7	9.36
Southdown Ewes					7	8.07
Totals	16	\$ 12.56	44	\$ 8.86	30	\$ 10.65
Southdown Rams	6	\$ 21.33	9	\$ 18.44	12	\$ 24.42
Suffolk Rams	39	24.62	44	21.73	65	20.84
Cheviot Rams	1	21.00	3	18.33		
Hampshire Rams	11	26.36	14	28.86	28	22.68
Oxford Rams	38	20.15	27	18.11	21	19.07
Shropshire Rams	7	20.43	11	16.91	12	21.50
Totals	102	\$ 15.76	108	\$ 11.63	138	\$ 21.31
CALGARY:						
Shropshire Ewes	6	\$ 17.67	4	\$ 12.37	17	\$ 12.53
Southdown Ewes	18	18.28	8	13.19	10	19.45
Suffolk Ewes	14	13.14	23	15.72	33	16.73
Hampshire Ewes	80	15.65	58	12.17	53	17.97
Cheviot Ewes						
Totals	118	\$ 16.18	93	\$ 13.15	113	\$ 16.92
Grade Ewes	172	\$ 5.18	172	\$ 6.01	104	\$ 6.87
Shropshire Rams	12	\$ 21.75	16	\$ 23.06	9	\$ 13.56
Southdown Rams	19	18.21	19	23.16	17	19.03
Corriedale Rams			6	34.17	2	35.50
Hampshire Rams	144	24.69	118	22.84	118	22.95
Rambouillet Rams	12	21.66	9	29.78	9	26.33
Suffolk Rams	53	15.60	72	22.54	128	21.49
Oxford Rams						
Cheviot Rams	1	20.00				
Totals	241	\$ 15.12	240	\$ 23.33	283	\$ 21.95

It is evident that sheep breeders of the Province are faced with the necessity of giving serious consideration to the type of lamb they are going to produce, if they are to maintain a satisfactory market.

The demand for a compact, light weight lamb is causing breeders to make efforts to set up production for that class of animal. The assistance of the Department will be available to the sheep industry in its efforts along these lines.

LIVE STOCK EXHIBITIONS

The advent of war brought a cancellation of the Toronto Royal Winter Fair for 1939, a move of considerable regret to Alberta stockmen. The live stock exhibits planned for the 1939 Fair promised to provide one of the most impressive displays ever sent to the Eastern competition by this Province. Several of the exhibitors decided to send a portion of their exhibits to the Chicago International Live Stock Show when it became known that the Toronto Show was cancelled, and their winnings in the large classes at that exhibition again demonstrated the quality of Alberta stock.

With a comparatively small exhibit, the Alberta delegation carried away 22 placings, starting with second place on Hereford steers. Alberta made a commendable showing in Hereford and Aberdeen-Angus breeding classes, and in singles and groups of all three breeds in fat cattle. Alberta Percherons were also in the money in an extremely heavy entry of draught horses. The Department of Agriculture assisted with the Chicago exhibit by duplicating the prize moneys won by exhibitors.

Early in the year the Department assisted in financing a Provincial beef cattle exhibit to the Golden Gate International Exposition at San Francisco. In competition with the best American herds in record-sized classes, the Alberta entries did unusually well. A well-bred and splendidly fitted Shorthorn steer entered by the University of Alberta carried off the Reserve Grand Championship ribbon of the show, coming within a very slight margin of winning over the Grand Champion, and won the unanimous approval of the stockmen assembled. In addition, entries from the herds of A. W. Crawford-Frost, Chas. Bull & Son, Claude Gallinger, E. J. C. Boake, T. S. Henderson & Son, Walter McCollister, Geo. Calder, and J. Biglands placed at the head, or near the head of entries in both breeding and fat cattle classes.

Shorthorn bulls from the Claude Gallinger and University herds, and a Hereford sire from A. W. Crawford-Frost, set the pace for price in the pure-bred sales at the Show.

The Calgary and Edmonton Exhibitions were featured by stronger live stock exhibits, with an increased number of Alberta entries, while these same exhibits also did well in the other "A" Class Shows of the Western Circuit.

The "B" and "C" Class Fairs were also featured by stronger live stock entries and by increased numbers of local exhibitors.

LIVE STOCK POLICIES

The Branch has continued to foster aggressive live stock improvement policies, with the feeling that only by such effort can more impetus be given to improved quality of product and consequent improvement in the financial position of the producer.

Bull Exchange Policy.

The inauguration of this policy was announced in the last report of the Branch. It is now possible to give a report on the operation of the policy during its first year.

During the 1938-39 season, 395 registered beef sires were placed on Alberta farms, through the policy, with the consequent removal of the same number of inferior bulls. The districts in which these were placed extend from the northernmost part of the Province to close to the American boundary. While it is impossible to secure absolute uniformity and satisfaction in handling this number of animals, it is gratifying to the Branch to be able to record that complaints were received in approximately only one per cent of the exchanges made. These complaints were all investigated and adjusted between the breeder, the purchaser and the Branch.



A group of fine young sires—typical bull calves for distribution under the Bull Exchange Policy.

There is no doubt that an even larger number of sires could be placed under the policy during 1939-40; however, it may be necessary to close this early because of the inability to secure a sufficient number of young sires to meet the demand.

Stockmen, both individually and through their organizations, are commending this aggressive and far-reaching policy, and are co-operating in revising and strengthening the policy as it develops.

SWINE IMPROVEMENT POLICIES

Boar Exchange Policy.

The policy known as the "Boar Exchange Policy" was introduced by the Department early in May of this year. This policy had as its objective the elimination of undesirable breeding stock and, at the same time, replacement of such stock with sires of good bacon type and conformation. Our swine promoter inspected and purchased boars on the farms of the leading breeders throughout the Province for use under this policy. These were assembled at a central plant and were held until applications were received, and then shipped by express to the new owners. Boars of three to four months old were sold at \$17.00, and boars ready for service at \$25.00. It became necessary, however, after November 1st to increase the price of the animals being sold, due to the scarcity of

supply and the fact that, at the sales, prices were set at a distinctly higher level. This policy had a remarkable growth, 287 boars being placed, and at the end of the year it was necessary to temporarily discontinue its operation due to the impossibility of securing more boars in the Province.

In addition, the Department introduced new blood lines into this Province by bringing in a carload of Advanced Registry boars from Eastern Canada. These boars were sold to pure-bred breeders throughout the Province at cost, and in this way much needed assistance was given to the breeders who could not afford to go outside of the Province for new blood lines. During the coming year another carload of approximately fifty sires will be distributed in a similar manner.

Sow Distribution Policy.

For a number of years the Dominion Government have had a policy whereby grade sows of "select" bacon type were resold to farmers at cost as breeding stock. As our District Agriculturists in the majority of cases have been responsible for much of the success of this policy, through their work in placing many of these groups as well as individual orders, it was felt an effort should be made to arrange a closer working set-up on the policy with the Dominion Department, a feeling heartily reciprocated by the Federal authorities. It pleases us to report that during the fall of this year this policy became a joint Dominion-Provincial policy, thereby allowing the applicant to receive his grade sow landed at his nearest shipping point with no freight charges against it. Where groups of five or more farmers secure a minimum of 20 gilts under this arrangement, a pure-bred boar is supplied to the group free of charge. There is a keen demand for gilts, and all gilts of the desired conformation and type have been purchased during the past three to four months. It is estimated that at least 2,000 gilts will be placed under this policy. The close co-operation between the two Departments on this policy should have a salutary effect on its value to the industry.

DAIRY SIRE EXCHANGE POLICY

It has been the hope of the Branch that an improvement policy with dairy sires, similar to that already in effect with beef sires, might be made operative in the Province, even on a limited basis. It is a pleasure to record that such a policy is now operative.

HORSE IMPROVEMENT POLICY

This policy, known as the "Co-operative Stallion Purchase Policy," has already been discussed elsewhere in this report.

LIVE STOCK FEEDER ASSOCIATIONS

Early in 1937 the Alberta Legislature, upon the recommendation of the Minister of Agriculture, enacted what is known as "The Feeder Associations Guarantee Act." The object of the Act was to provide a means whereby farmers wishing to fatten cattle, ewes or lambs might secure the credit necessary to purchase feeder live stock.

Each association legally incorporated in the Province may secure a continuing credit up to \$100,000 in any one year on the strength of the Provincial Treasurer's Guarantee, up to a maximum of 25% of the borrowings of the association.

Banks in various districts of Alberta provide funds during the year for the feeding operations of feeder association members under the Act.

The Department of Agriculture, through the Live Stock Branch, has provided for these associations a General Supervisor appointed to render assistance to the organizations, and has also provided live stock buyers on the leading stockyards of the Province, whose work it is to fill orders from the associations when the necessary feeders are not available close at hand.

During the feeding season of 1938-39 six associations were operated successfully. Feeders obtained satisfactory results, some far beyond their expectations, with the result that numerous requests have been received for the incorporation of additional associations to function during the 1939-40 feeding season. So many requests were received that it became necessary to amalgamate a number of prospective groups in certain areas, with the result that 12 associations are now operating in the Province. These are centered in the Lethbridge, Cardston, Raymond, Taber, Picture Butte, Olds, Innisfail, Lacombe, Edmonton, Wainwright-Chauvin, Vermilion and Brooks areas. Despite the late season, many enquiries are still being received from farmers desiring to join associations, or to form new ones.

Consistent with the live stock policies of the Department of Agriculture, The Feeder Associations Guarantee Act is a two-way policy. Farmers are rendered assistance to market their feed grains and forage crops "on the hoof," with the possibility of enhanced returns; while live stock growers have the additional market for their feeder live stock which these feeding operations provide.

The volume of operations of the six associations operating during the 1938-39 season is indicated by the following figures:

VOLUME OF OPERATIONS OF ALBERTA FEEDER ASSOCIATIONS DURING THE 1938-39 FEEDING SEASON, UP TO AND INCLUDING MAY 31, 1939				
Feeder Associations	Purchased and Fed Cattle Lambs and Sheep	No. of Feeder Members	Credit Provided	
Bow Valley Feeders' Association	451	13	\$ 19,358.34	
Edmonton and District Live Stock Feeders' Association	1,669	36	25,064.93	
Lethbridge Feeders' Association	905	17	52,067.51	
Olds Feeders' Association	2,423	40	76,645.94	
Red Label Feeders' Association	1,774	17	96,480.40	
Central Alberta Live Stock Feeders' Association	2,017	57	98,804.33	
Totals	9,239	180	\$368,421.45	

Present indications are that operations for the current season 1939-40 will be more than double those shown in the above summary.

The far-reaching effect of this Act on the permanency of the live stock industry of the Province will be readily recognized.

THE STOCK INSPECTION ACT

This Act has continued to serve as an effective safeguard for the stockmen of the Province. During the past year new provisions have been added by amendment to the Act, requiring all "trucked" live stock to be covered by a bill of lading, as is the case with stock shipped by rail. This has been done as an initial step in tightening up on the enforcement of the Act, and there is every indication that

the move will be of considerable value to the *bona fide* live stock owner.

Mention should again be made of the splendid co-operation received by the Branch from the R.C.M.P. in this stock inspection work.

The Field Inspector for the Branch, through contact with our Brand Inspectors and with the R.C.M.P., has been able to assist stockmen in cases where loss of stock occurred under circumstances which indicated a possibility of theft.

BRAND RECORDING

During the year, 398 horse brands, 655 cattle brands, 3 fox brands, and 1 poultry brand were recorded to their respective owners, while 107 transfers were registered. Searches, strays and certified extracts numbered 697, renewals 3,318 (cattle 2,086 and horses 1,232), making the total of 5,179 transactions.

Compared with 1938, these figures show an increase of 502 renewals and 53 transfers, and a decrease of 125 horse brands, 82 cattle brands and 7 fox brands. During the year a limited effort was made to inform stock raisers of the necessity of registering all stock brands used by them. While the figures relating to renewal of cattle brands indicates some degree of success in this direction, it is evident that many stockmen still do not appreciate how essential such registration is in the protection of their stock.

The approximate number of brands now in good standing in our registers is as follows: Horse brands 7,522, cattle brands 12,023, poultry brands 15, sheep brands 7, and fox brands 105, making a total of 19,672.

THE DOMESTIC ANIMALS (UNORGANIZED TERRITORY) ACT

This Act, relating to the establishment and maintenance of pound districts and the disposal of estray animals in the extra-municipal areas of the Province, has been given more than usual consideration during the year, with a view to ascertaining if its provisions are fully in keeping with present-day conditions.

There are at present 360 pound districts under the Act, exclusive of those in the Special Areas not at present administered by this Branch. Numerous requests for establishment of new districts and for revision of existing ones have been investigated by representatives of the Branch, and dealt with accordingly during the year.

ESTABLISHMENT OF RESTRICTED AREAS (T.B.)

The year 1939 heralded the inauguration of another new progressive step by the Department in the approval of moves to set up T.B. Free Areas in the Province.

While the establishment and maintenance of such areas is under the jurisdiction of the Dominion Department of Agriculture, recommendation in the first instance for the establishment of the area is made to the Dominion Department by the Provincial Minister of Agriculture. This move is made after the Provincial Department has received the necessary petitions bearing the signatures of not less than 66⅔% of all cattle owners in a proposed area. These areas are entire Municipal Districts, and all the towns and incorporated villages within the borders of such districts.

Stockmen of the Province created a record during the past year by submitting such a petition for the largest area ever applied for at one time. This area, from which the necessary petitions have been forwarded to the Federal authorities, comprises 453 townships, with a total cattle population of approximately 109,476 head. It constitutes a solid block including all that area, the boundary of which may be described as starting from the Saskatchewan boundary, between townships 44 and 45, extending irregularly west to Camrose, thence south to, but not including, Drumheller, and following the Red Deer River to the Saskatchewan boundary.

The Municipal Districts of Clover Bar No. 517, Strathcona No. 518 and Fairview No. 858, with cattle populations of 6,005, 9,971 and 2,883 respectively, have also submitted the necessary petitions for consideration, and testing has been completed in the two first mentioned.

It will be noted that the total cattle population in the above areas is 128,335. This large number of cattle, together with the extensive area involved, means that considerable time may elapse before the testing work is completed in the entire area. It may therefore be reasonably expected that as such tests proceed separate municipalities may be progressively designated as T.B. Free Areas.

The Branch has been privileged to assist in the preliminary work on these proposed restricted areas, realizing the importance of the move to both human and animal health.

THE HORNED CATTLE PURCHASES ACT

In 1938 the Alberta Legislature passed what is known as "The Horned Cattle Purchases Act," whereby live stock shippers were required to deduct \$1.00 per head on all horned cattle bought in the Province of Alberta, this deduction to be forwarded to the Department. The moneys received under the Act are placed in a trust fund to be used for the improvement of live stock in the Province and for any other type of live stock work found necessary, whereby the farmer receives a direct benefit, as well as expenditures in the administration of such live stock improvement work.

The object of the Act is the elimination of horns on cattle being marketed, as these cattle cause considerable damage in transit.

CONTROL OF THE WARBLE FLY

The Department has purchased a large supply of Warble Fly Powder, which will be provided at cost to organized groups of farmers, in an attempt to combat the Warble Fly.

Considerable interest has been evidenced by many groups of farmers, and no doubt this policy will be highly appreciated and taken advantage of by those farmers who find this pest a serious problem.

REPORT OF THE PROVINCIAL VETERINARIAN

(DR. P. R. TALBOT)

The services of this Branch may be briefly summarized under the following headings:

Assistance to those living in outlying districts where no Veterinary services are available; assistance in the prevention and control of live stock diseases throughout the Province that do not come under The Animal Contagious Diseases Act of the Dominion Government; the supervision of the health of the live stock at all the Provincial Government institutions; investigational work in relation to diseases of live stock, including those of fur-bearing animals found in this Province; conducting meetings relating to diseases of live stock in various parts of the Province; carrying out the provisions of The Stallion Enrolment Act.

The prevention and control of disease in animals is probably the most important phase of live stock production. As many of our animal diseases are closely related to those of the human family, and are known to be communicable, their importance cannot be too strongly stressed. If the health of the people of the Province is to be properly safeguarded, it is essential that our live stock be kept free from disease and maintained in the best possible state of health. Not only is this important from a health as well as a financial standpoint, but in addition we are asked at this critical stage of world affairs to do our part in contributing large quantities of good meat to our fighting forces overseas. The prevention and control of our animal diseases, as well as losses through mismanagement of our meat producing animals are, therefore, problems of the greatest magnitude.

The scarcity of qualified Veterinarians continues to be a serious problem in this Province. There are many sections without such services, and this Branch has given every assistance within its power to those who require professional aid, especially in those areas, in controlling outbreaks of disease among their live stock, as well as recommending treatment for sick animals suffering from miscellaneous ailments.

Many districts are without the services of railway transportation, which necessitates our live stock being carried long distances by truck or trailer; this is not only hard on live stock on account of being subjected to extremes of temperature as well as lowering the vitality of the animals and making them susceptible to various diseases, but may be the means of spreading disease long distances in an extremely short period of time.

This Branch has always worked in very close co-operation with the Provincial Health Department, and during the past year was able, with its assistance, to prevent several outbreaks of disease in live stock which would have obtained a foothold and been serious from a health standpoint.

We believe valuable assistance was given to the fur breeders of the Province in the prevention of what, at one time, appeared as if it might assume a serious epidemic among foxes. We also rendered every possible help to the Fur Farm in connection with

losses occurring in mink. Owing to the increased interest in the rearing of fur animals in captivity, their problems are demanding more attention each year.

During the past year more attention has been given to the publication of bulletins on various live stock diseases than formerly; also radio talks have been given on these subjects at various times. It is our hope that some help has been given to the farmers of the Province through this means, although we are fully aware of the inability of many people to make a proper diagnosis of the troubles affecting their animals, with the result that more harm than good is accomplished through improper treatment.

The qualified Veterinarians throughout the Province have given every co-operation during the past year. Many of them have been untiring in their efforts to prevent outbreaks of disease in the districts in which they are practising. In order to vaccinate as great a number of horses as possible in 1938 against an outbreak of Equine Encephalomyelitis, they instructed many untrained men as to the proper method of inoculation. It is due to these Veterinarians that the men trained did the vaccinating in an efficient manner and avoided the disastrous results that occurred in some parts of the country. Many of the men had no previous knowledge of the proper technique, and were unfamiliar with the precautionary measures that had to be taken in the use of vaccines.

HORSES

During 1939 a considerable number of cases were reported, and some losses resulted from the following: Navel disease, Influenza, Distemper, Stomatitis, Swamp Fever, and some cases of Contagious Abortion.

It was in connection with Equine Encephalomyelitis, however, that most of our anxiety was experienced. We were particularly fortunate that through the efforts of the three Provincial Governments, viz., Manitoba, Saskatchewan and Alberta, a sufficient quantity of Lederle and Cutter (Chick) vaccine was secured at a much lower cost than in 1938. It was felt that 75c per treatment (two doses) was not excessive, and with proper organization a large proportion of our horses were vaccinated, with the assistance of the secretaries of municipalities, veterinarians, druggists and instructed individuals in unorganized districts. I am pleased to report that we were unable to find one authentic case of the disease occurring where the horses were properly vaccinated with either of the two vaccines made by the biological houses mentioned above. According to information obtained through a member of the practising veterinarians in Alberta, approximately 50 head of unvaccinated horses died from the disease, and although a large number of horses that were not vaccinated developed symptoms regarded as highly suspicious, it was impossible to state definitely whether this was due to the virus causing Equine Encephalomyelitis. There is always the possibility that if our horses had not been vaccinated and an outbreak had occurred, the virus would have increased in virulency and serious losses resulted.

CATTLE

Cattle diseases have not been particularly serious during the past year, with the exception of Hemorrhagic Septicemia and Blackleg. We have had some serious losses in connection with the

former, especially among animals going into feed lots this fall. The explanation of this may be accounted for by the fact that many of these animals were shipped long distances and exposed to unusual weather conditions. On account of lowered vitality they became susceptible to Shipping Fever and associate diseases. In all the outbreaks that occurred, the disease was controlled as soon as a diagnosis was made by the use of bacterins obtained from reliable biological houses, and the careful disinfection of the premises.

In connection with Blackleg we still have many losses, but it has taken considerable time to impress all of the cattle men of the advantages of liquid vaccines as an immunizing agent over antiquated methods that have been practised in the past. Several biological houses have placed upon the market preparations that if the animal is given one inoculation it obtains practically life immunity against the disease. If the farmers would carefully vaccinate all the calves born each year, the losses from Blackleg would quickly disappear.

SHEEP

A number of losses in this class of live stock have occurred during 1939. Outbreaks of Blackleg, Hemorrhagic Septicemia and Sore Mouth were reported from various parts of the Province. We did not receive any reports of weed poisoning this season. Some years the losses from plant poisoning, especially in the southern part of Alberta, is very heavy. The explanation of no cases of Death Camas poisoning occurring in range sheep is probably due to the fact that pasture was plentiful on the range land, and the animals could be more particular as to their choice of forage. There is no doubt that sheep parasites will eventually become a major problem with us. The stomach worm is found in many flocks, and sheep men are rapidly realizing the importance of systematically treating both lambs and ewes. We are also impressed with the number of lambs affected with tape-worm. The extent of infestation is particularly marked in the number of lambs found in feed lots during the past few months. From the number of requests received for bulletins containing information on the treatment of parasites in sheep, we believe that both the men interested in the feeding of lambs as well as the sheep men are aware of the situation.

SWINE

Owing to the increased interest in swine production we are receiving more requests for information regarding swine disease than ever before. For this reason we recently gave a talk over the radio on this important subject. We have a bulletin under publication on swine parasites, which also contains information dealing with sanitation. This should be helpful to those interested in the raising of this class of live stock. On account of the importance of the swine industry we have endeavoured to stress the necessity of sanitation and disinfection in the prevention and control of swine diseases. Numerous outbreaks of Swine 'Flu, Pneumonia and Hemorrhagic Septicemia are being reported, due largely to climatic conditions, which have been particularly favourable this fall to respiratory disorders. It would appear as if too much dependence has been placed upon the use of vaccines to prevent diseases, while the danger of invasion of parasites and taking proper sanitary measures has been overlooked. There is no one vaccine that will prevent all

the bacterial organisms affecting swine, and the sooner this fact is realized the better it will be for the swine industry.

DISEASES OF FUR-BEARING ANIMALS

There has been very close co-operation between the office of the Game Commissioner and this Branch. The importance of the fur-bearing industry is fully recognized by all. Many cases of improper feeding and faulty diet were investigated and rectified. Post-mortems were held on mink dying as a result of Pneumonia, Cystic Calculi, Coccidiosis and many other disorders. These cases were all followed up by Mr. William Colpitts, Fur Farm Supervisor, and the causes, prevention and treatment, as the case may be, were fully explained to the owner, and we believe that by our combined efforts much loss was prevented.

In addition, there were indications of a serious outbreak of Distemper occurring on the fox ranches throughout Alberta in the earlier part of the year. This Branch is possibly in the best position to appreciate the valuable work done by Dr. R. M. Shaw, Assistant Bacteriologist, University of Alberta, in developing a vaccine which controlled the outbreaks of this disease, as well as the arduous task of Mr. Colpitts in inoculating the animals, while fox farms outside the Province were experiencing the worst epidemic in years, our losses were reduced to a minimum.

STALLION ENROLMENT

There is continued interest in horse breeding throughout the Province. This is particularly noticeable in central and northern sections, judging by reports of our Stallion Inspectors and others closely associated with the rearing of horses. The desirability of producing sound animals of good conformation is also more noticeable than in previous years. The placing of stallions under the Co-operative Purchasing Plan is no doubt having an educational effect in drawing attention to the fact that hereditary unsoundnesses should be carefully guarded against. The fact that all stallions travelled in Alberta must be inspected every five years is having a beneficial effect in improving the quality of our stallions. Owing to the popularity of tractor farming at present, there is the possibility of a decrease in the number of horses raised; on the other hand, it would appear as if the horse breeders wished to improve the quality and type of their animals. We have an excellent reputation in Eastern Canada for the class of horses we are producing, and every endeavour is being made to maintain our standard in this regard.

The raising of thoroughbred horses is also commanding attention, and the performance made by several of our breeders at the race meets during the past summer was gratifying to the owners, as well as appreciated by the horsemen generally. The Thoroughbred Horse Breeders' Association, riding schools and academies have all acted as a stimulus to the breeding of thoroughbreds, saddle horses and animals suitable for remount purposes, and eventually we should be able to market a considerable number of horses of this type, in addition to those of the draft breeds.

During the past year 463 stallions were inspected; of this number, 312 were passed and granted certificates to travel in the Province. The number turned down as being unsuitable for breeding purposes was 134. Our inspectors recommended 17

stallions for re-inspection. It was found advisable to do this for various reasons.

In 1938 an amendment to The Stallion Enrolment Act was passed calling for the inspection of all stallions being used for public service every five years. During 1939, 176 stallions were inspected, of which 126 passed; 50 were turned down and one recommended for re-inspection in 1940.

There were 16 stallions imported into Alberta during 1939 which required inspection. Of those, 7 passed inspection, 7 were turned down as undesirable, and 2 were recommended for re-inspection in 1940.

There is a provision in The Stallion Enrolment Act for a re-examination should a stallion be turned down and the owner be dissatisfied with the result of the inspection. Under this provision we had 10 stallions re-inspected; 8 of these failed to pass the second examination, and 2 passed the second and third required inspections.

The following is the number of stallions enrolled for 1939, arranged according to breeds:

Percherons	454	Suffolk	8
Clydesdales	265	Standard	8
Belgians	142	American Saddle	3
Thoroughbreds	22		
Shire	16		918

This is an increase of 43 enrolments over 1938.

This year we have undertaken a new procedure in connection with our report of stallion enrolment. This consists of giving the reasons why our inspectors found it necessary to turn the stallions down. While this information is not absolutely correct in every detail, as a number of the stallions were suffering from more than one hereditary unsoundness, yet we believe the data set out below should be of some educational value:

Sidebones and bad feet	17	Bad conformation and unsound	43
Laryngeal Hemaplegia	10	Bad conformation	27
Ringbone	5	Ridgling	1
Bog Spavin	5		
Bone Spavin	15		134
Stringhalt	11		

REPORT OF THE DAIRY COMMISSIONER

(D. H. McCallum)

Although the year 1939 was a favourable one for dairying, the production and value of dairy products did not reach the high figures of 1938.

In summarizing the report of 1939, we note a number of features that call for special mention, some of which may be classified as favourable and others regarded as unfavourable.

The quality of cream delivered to the creameries shows an improvement over 1938. There was also an improvement in the quality of creamery butter, when the percentage of first grade increased from 85.7 to 86.9, and 63.1% of this first grade scored 93 points or over, the highest percentage since the grading was taken over by the Federal Government in 1927. The estimated production of farm dairy butter shows an increase of 2% over the figures for 1938. There was a reduction of 11,700 in the number of cows kept for milk purposes, but with an increase of 1.1% in the milk produced, it indicates clearly the increase in the average production per cow.

On the other hand, the production of creamery butter shows a decrease of 4.8% and factory cheese a reduction of 10.4% under the all-time records established in 1938.

There was a slight decrease in the price of churning cream, in creamery butter and in factory cheese. Lower prices in markets of other countries, with Canada holding a larger surplus of dairy products than usual, have been responsible for these lower values.

It is encouraging to note that in 1939 higher price levels have existed during the last four months of the year, while just the opposite was true during 1938. This condition was undoubtedly brought about by the war and, although this situation is most regrettable, it has made possible the ready disposal of surplus stocks of butter and cheese.

The heavy rainfall in June that extended over a large area of the Province provided excellent pasture for dairy cattle during the early part of the summer. A very good hay crop was also reported in most districts. However, a prolonged dry period, beginning the middle of July, had a devastating effect on pastures from then on, and greatly reduced the quantity as well as the quality of coarse grains. This fact was reflected in the milk production during the fall months.

A summary of the production and values of dairy products is presented in the following statement. For the sake of comparison, the figures for 1938 have been included:

QUANTITIES AND VALUES OF DAIRY PRODUCTS
(1939—FINAL)

	Pounds	Price	Total Value
Creamery Butter	29,749,958	\$.2106	\$ 6,265,341
Farm Dairy Butter	15,912,000	.1606	2,555,467
Factory Cheese	2,196,157	.1203	264,198
Farm Dairy Cheese	225,000	.1003	22,567
Ice Cream (Gallons)	619,345	1 1237	695,954
Milk, Cream and Evaporated, consumed, fed to animals, or otherwise utilized			8,266,206
			<u>\$18,069,733</u>

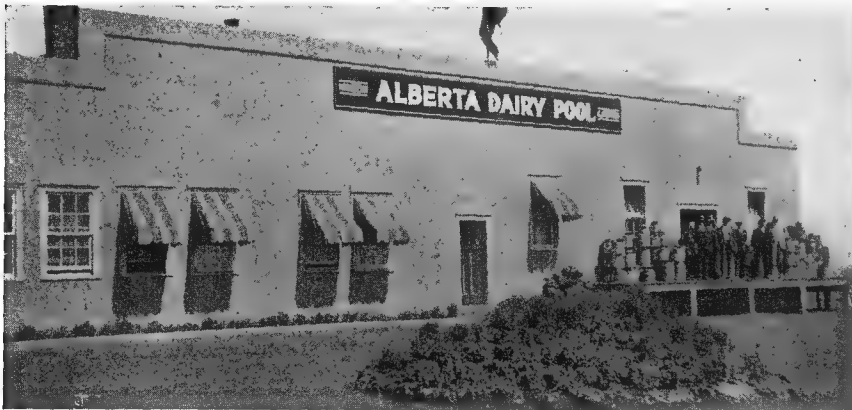
(1938—FINAL)			
Creamery Butter	31,242,357	\$.2291	\$ 7,157,624
Farm Dairy Butter	15,600,000	.1791	2,793,960
Factory Cheese	2,451,821	.1421	348,404
Farm Dairy Cheese	250,000	.1221	30,525
Ice Cream (Gallons)	586,338	1.1417	669,418
Milk, Cream and Evaporated, consumed, fed to animals, or otherwise utilized			7,587,987
			<u>\$18,587,918</u>

DAIRY CATTLE

A report from the Dominion Bureau of Statistics shows that according to the estimate of June 1st, 1939, there were 429,200 milch cows in Alberta compared with 440,900 on June 1st, 1938, a reduction of 2.7%. There was also a reduction of 500 yearlings kept for milk purposes. However, there was an increase of 9,400 calves, which may have an effect on future production.

CREAMERIES

There were 96 creameries in operation during the year as compared with 97 during 1938. The plant at Metiskow burned down late in 1938 and was not re-built. Two other creameries did not operate the full year; fire destroyed the plant at Forestburg early in January, which was not re-built, and the first week in June the Campbell & Griffin Creamery, Calgary, was closed.



Northern Alberta Dairy Pool, Ltd., Sedgewick—Winner of Ideal Creamery and Beautification Contest, 1939

The average output of butter per creamery for 1939 was 309,895 pounds, which was a decrease of 12,191 pounds as compared with the average for 1938.

CREAM SUPPLY TO CREAMERIES

The quality of cream received at the creameries shows an improvement over the previous year. The following tabulation shows the quantity and percentage of butterfat in the various grades. For sake of comparison, similar figures have been included for 1938 and 1937:

DEPARTMENT OF AGRICULTURE

AVERAGE TESTS AND GRADES OF CREAM

	1939		1938		1937	
	Pounds	%	Pounds	%	Pounds	%
Cream Received	73,530,777		77,401,690		66,221,560	
Average Test		(34.4)		(34.2)		(34.0)
Butter Fat						
Table Grade	727,445	(2.9)	599,833	(2.3)	575,332	(2.5)
Special Grade	17,234,846	(68.1)	17,465,388	(65.9)	14,658,133	(65.1)
First Grade	6,625,918	(26.2)	7,529,294	(28.4)	6,514,229	(28.9)
Second Grade	667,439	(2.6)	807,334	(3.1)	712,267	(3.2)
Off Grade	35,425	(.2)	89,336	(.3)	61,070	(.3)
	25,291,073	(100.00)	26,491,185	(100.0)	22,521,031	(100.0)

The Dairy Branch has endeavoured to educate the producers to market sweet, clean flavoured cream, and obtain the highest possible returns. Addresses were given on this subject at a number of agricultural meetings throughout the Province. In addition, talks were given over the radio and a bulletin entitled "The Production of High Quality Cream" was prepared for distribution. It is to be hoped that this work will assist many of those producers unable, in the past, to market cream of the top grade.

There are a few districts in the Province where the quality of cream is considerably below average. Requests have come from creameries in these areas to have a fieldman visit the farms and give detailed information on the care of cream. This is a field which warrants consideration.

The Cream Grade Standards have been rigidly enforced during the year by Inspectors of the Dairy Branch. There were 2,055 visits to factories, where 81,081 cans of cream were checked for grades, and 28,732 samples of milk and cream check tested for butterfat content.

BUTTER GRADING

The Dominion Department of Agriculture, whose function it is to score and grade all butter, reports annually on the quality and quantity of butter graded. The following statement is a summary of this report for the past five years:

STATEMENT OF CREAMERY BUTTER GRADED (PASTEURIZED)
FEDERAL REPORT (56-pound boxes and samples)

	Total Pounds Graded	First Grade	Second Grade	Third Grade	Below Third Grade
1935	19,081,270	83.0	10.5	6.0	.5
1936	21,584,080	87.4	7.4	4.4	.8
1937	23,553,880	87.0	7.4	4.5	1.1
1938	27,839,952	85.7	7.9	5.4	1.0
1939	27,219,976	86.9	7.0	5.4	.7

One of the main functions of the field staff of this Branch has been to assist and instruct the buttermakers on methods designed to overcome defects in Alberta butter. It is most difficult to record improvements when the general quality is high, but during 1939 an excellent showing was made, both for first grade and also 93 score butter, which is in demand on all markets. Inspectors and Instructors of the Dairy Branch, working in close co-operation with the Dairy Laboratory, made surveys at most of the plants where surface taint butter had been produced during 1938. As a result of this work, the source of contamination was located in many cases, and the amount of surface taint butter was reduced from 104,822 pounds in 1938 to 24,877 pounds in 1939.

BUTTER COMPETITIONS

Alberta buttermakers were again encouraged to exhibit at the large Canadian Exhibitions, viz., Vancouver, Calgary, Edmonton, Saskatoon, Regina, Brandon, Toronto National, Ottawa and London. The Toronto Royal was not held in 1939, which accounts for a smaller number of prizes won. However, exhibits from Alberta won a total of 632 awards, or 45.3% of the total prizes in these competitions. It is with particular satisfaction that we report the winning of the Motherwell Trophy by an Alberta creamery. This trophy is awarded annually to the creamery with the highest aggregate score in the two creamery butter classes at Regina Exhibition, and it returns to Alberta after an absence of ten years. In addition, the first and second highest average scores at the Vancouver Exhibition were won by Alberta factories.

DAIRY BRANCH LABORATORY

The bacteriological work was continued in the Dairy Laboratory at the University. Dr. J. B. Linneboe, Bacteriologist, reports that 2,634 mould and yeast counts were made on samples of creamery butter from 83 creameries. These counts have furnished the creameries with valuable information on the sanitary conditions prevailing in the plants. Defects such as mould and surface taint have been greatly reduced, and the keeping quality of our butter has been improved as a result of these routine counts. An increased number of water samples, representing creamery water supplies, were analyzed for bacteria, moulds and yeasts. Information dealing with the treatment of contaminated water was supplied to a number of factories where the water was of doubtful purity.

The lowest average mould and yeast counts of Alberta butter were reported in 1939. The following table is included to show the improvement since the work commenced in 1925:

Year	Number of Analyses	Av. Number of Moulds	Av. Number of Yeasts
1925	686	28	8,327
1930	2,799	25	619
1932	2,529	13	569
1934	2,128	6	207
1936	2,496	3.3	275
1937	2,529	3.0	170.2
1938	2,610	3.2	110.7
1939	2,634	2.2	74.6

CHEESE FACTORIES

There were 19 cheese factories in operation during 1939, and 2,196,15 pounds of cheese manufactured as compared with 2,451,821 pounds in 1938. Production of cheese showed remarkable increases during the first five months of the year, but large stocks and reduced prices had a depressing effect during the months of heavy production. This resulted in a decrease of 10.4% for the year.

New co-operative cheese factories were established during the year at Crooked Creek, Atmore and Neapolis (Didsbury P.O.). The Producers' and Consumers' Milk Company of Calgary also manufactured cheese part of the season.

Exhibits of cheese manufactured in Alberta factories were successful in winning all the prizes in the open classes at the Calgary, Edmonton and Vancouver Exhibitions, indicating that our quality compares favourably with the best.

The importance of maintaining cool, uniform temperatures for maturing cheese has been stressed by instructors of the Dairy

Branch. This has resulted in certain factories making preparation to insulate and properly refrigerate curing rooms. Improvements of this nature will not only allow Alberta factories to properly mature a certain proportion of their cheese, but will safeguard the quality.

BUTTER WEIGHING SERVICE

The check weighing of 56-pound boxes of creamery butter and the issuing of grade certificates was continued by the Dairy Branch in 1939. There were 5,968 boxes weighed, and a total of 46,440 boxes in the shipments covered by weight certificates.

REVENUES

Revenues from creamery and cheese factory licenses amounted to \$605; graders' and testers' license fees, \$544; and the fees collected from herd testing amounted to \$60, making a total revenue of \$1,209.

As in former years, the surplus from the Cream Grading Trust Account was refunded to the creamery operators. The Trust Account was duly audited and found in order, with improved collections and ample reserves for bad accounts.

HERD TESTING WORK

The Cow Testing Service offered by the Dairy Branch served 86 herd owners. In studying the report of this work during the past two years, it was noted that the average production per cow increased considerably during 1939. It appears that the information gained by keeping these production records served as a basis in eliminating many of the low producing cows.

The following statement compares the number of cows and production of milk and butterfat per cow in the herds under test during the past two years:

	1939	1938
Number of herds under test	86	61
No. of cows under test	856	659
Average production of milk	5,533	4,500
Average production of butterfat	210.4	168.0

INSTRUCTIONAL WORK

As in former years, a four weeks' Creamery Short Course was conducted jointly by this Branch and the Department of Dairying at the University.

A two weeks' Creamery Short Course for the young men, trained in the creameries under the Dominion-Provincial Youth Training scheme, was held at the Provincial School of Agriculture, Olds. Lectures and instructional work were given by members of the Dairy Branch staff.

A Buttermakers' Conference was held at St. Paul early in May. This is the first opportunity buttermakers in the north-eastern part of the Province have had to meet and discuss their particular problems. The results of this conference were most encouraging.

Dairy meetings were held at most of the cheese factory points, where addresses were given and motion pictures shown on production of high quality milk. It is expected that the quality of milk and cheese will improve as a result of these educational meetings.

DAIRY FARM STUDY

A survey, designed to indicate costs of milk and butterfat production and factors affecting these costs, was inaugurated during the year. This work is a joint study, conducted by the Dominion and Provincial Departments of Agriculture, the Board of Utility Commissioners and the University of Alberta.

Fieldmen visited the farms in the Edmonton area, setting up accounts for 302 producers. Four different groups of producers were represented in the total, which were made up as follows: fluid milk 67, inspected cream 67, churning cream 123, and cheese milk 45.

The fieldmen will visit these producers periodically throughout the year, keeping the entries up to date, before closing the account books at May 31st, 1940.

STAFF CHANGES

Two of the older members of the staff retired during the year: H. J. Donnelly, Assistant Dairy Commissioner, on May 31st, and Geo. W. Scott, Instructor and Inspector on November 30th. Both these gentlemen joined the staff early in 1907, and for over 33 years served the dairying industry of this Province in a very efficient and capable manner.

C.C. Gillespie, Inspector, resigned on September 30th, to take over the Carstairs, Creamery, Carstairs.

F. W. Wood joined the staff on January 1st as Creamery Inspector.

H. L. Beckett took over Mr. Gillespie's duties in the Calgary district on November 1st.

T. W. Clarke was appointed May 18th as a Fieldman for the Dairy Farm Study work.

DATA

The following tables set forth the details of production for 1939 and statistical information concerning dairying in former years:

MONTHLY AVERAGE NET PRICES PAID BY CREAMERIES IN ALBERTA PER POUND OF BUTTER FAT IN 'SPECIAL GRADE' CREAM, F.O.B. SHIPPING POINT, FOR FOUR YEARS

	1939		1938		1937		1936	
	F.O.B.		F.O.B.		F.O.B.		F.O.B.	
	Cents	%	Cents	%	Cents	%	Cents	%
January	17.2	(4.2)	25.7	(3.8)	22.3	(3.8)	21.0	(4.6)
February	16.7	(4.0)	29.5	(3.8)	22.0	(3.8)	20.4	(4.5)
March	16.5	(4.4)	33.5	(4.5)	22.4	(3.8)	18.5	(4.7)
April	16.5	(5.9)	32.5	(6.2)	25.3	(4.4)	18.0	(5.5)
May	16.4	(10.5)	25.1	(9.6)	22.0	(8.1)	17.9	(8.5)
June	17.5	(15.6)	20.6	(15.4)	22.6	(14.5)	17.3	(14.9)
July	17.7	(16.0)	21.4	(15.8)	23.2	(15.4)	19.2	(15.3)
August	17.0	(13.1)	19.2	(13.3)	23.9	(15.3)	20.8	(13.2)
September	19.8	(9.1)	17.2	(9.9)	23.0	(11.8)	22.0	(11.0)
October	24.5	(7.2)	16.5	(5.5)	25.7	(8.6)	23.4	(8.5)
November	24.5	(5.4)	16.5	(5.3)	25.7	(6.1)	21.0	(5.2)
December	24.5	(4.6)	16.5	(4.3)	25.7	(4.4)	21.0	(4.1)
The Year	18.62	(100.0)	22.14	(100.0)	23.34	(100.0)	19.89	(100.0)

NOTE—The figures inclosed in brackets represent the monthly percentages of the cream receipts for the year.

DEPARTMENT OF AGRICULTURE

CREAMERY BUTTER PRODUCTION

Year	Creameries	Pounds Butter	Selling Value	
			Total	Cents per lb.
1920	53	11,821,291	\$6,555,509	(55.45)
1925	99	19,630,101	6,959,059	(35.45)
1930	92	17,716,744	4,968,227	(28.04)
1931	93	22,957,922	4,711,231	(20.52)
1932	95	21,016,048	3,512,685	(16.71)
1933	96	23,852,350	4,308,962	(18.10)
1934	96	25,601,447	4,830,793	(18.80)
1935	97	23,094,707	4,588,917	(19.90)
1936	96	25,491,105	5,501,767	(21.60)
1937	96	26,323,562	6,449,273	(24.50)
1938	97	31,242,357	7,157,624	(22.91)
1939	96	29,749,958	6,265,341	(21.06)

FACTORY CHEESE PRODUCTION

Year	Factories	Pounds Cheese	Selling Value	
			Total	Cents per lb.
1920	7	398,750	\$ 110,355	(27.70)
1925	14	1,473,835	306,604	(20.80)
1930	8	1,035,352	175,392	(16.94)
1931	10	1,040,588	118,390	(11.38)
1932	12	1,439,715	146,177	(10.15)
1933	11	1,437,387	149,593	(10.40)
1934	11	1,370,425	154,138	(11.20)
1935	11	1,364,526	168,280	(12.33)
1936	12	1,451,735	190,469	(13.00)
1937	14	1,838,589	268,434	(14.60)
1938	15	2,451,821	348,404	(14.21)
1939	19	2,196,157	264,198	(12.03)

TOTAL ANNUAL VALUE OF DAIRY PRODUCTS

1900	\$ 546,476	1933	\$12,950,000
1910	7,855,761	1934	14,391,204
1915	15,896,586	1935	14,252,500
1920	34,000,000	1936	15,505,800
1925	23,002,000	1937	17,137,900
1930	18,675,500	1938	18,587,918
1931	15,750,000	1939	18,069,733
1932	11,850,000		

MILCH COWS

Year	Cows	Year	Cows
1901	46,101	1933	406,520
1906	101,235	1934	461,700
1911	147,687	1935	464,200
1916	277,324	1936	458,200
1921	432,838	1937	453,600
1926	436,500	1938	440,900
1931	385,000	1939	429,200
1932	424,000		

REPORT OF THE FISH AND GAME COMMISSIONER

(W. H. WALLACE)

This past year has been one of great activity and outstanding in results. The protection, conservation of all wild life and the marketing of furs has greatly broadened during the past two years. Modern business methods become yearly more apparent, and good game management increasingly necessary.

To obtain the optimum of results, the need for practical and scientific personnel of a high calibre educationally is a necessity, and I am pleased to advise that the staff employed by this division is kept up to this requirement.

Since the return of the Fish and Game Division to the Department of Agriculture, evidence was obtained of an urgent need for a complete change in the status of wild life protection and a review, in the light of new problems, appeared necessary.

Therefore, both as regards the two divisions of fish and game, close attention was given to the reaction of public opinion; conferences were held, meetings attended and advice solicited. The valuable information received during that period has served well as a basis for construction action during the year 1939.

MIGRATORY GAME BIRDS

Later in this report there appears further information, and suffice it to say that the sportsmen public have been given the maximum of open seasons compatible with energetic conservation.

Reports published suggest a 2% increase in migratory waterfowl over the year previous. Drought conditions, while still extensively prevalent and disturbing to wild life, are improving. The Corporation of Ducks Unlimited (Canada) has afforded comprehensive reports and aid in combatting this factor. This corporation has undertaken to collaborate with this Division as well in properly supervising the large Federal-Provincial Bird Sanctuary system, to the end that they will be an effective contribution in the increase of migratory waterfowl and upland game birds.

UPLAND GAME BIRDS

A large increase in Sharptails (Prairie Chicken) and Ruffed Grouse (commonly called Bush Partridge) is recorded, especially in those districts where heavy reserves of poplar are still to be found. This increase recorded in the season immediately past affords ample proof that this increase will be accelerated until the peak year of 1941-1942. An open season was permitted in certain districts, and the shoot indicates good bags resultant. Hungarian Partridge, after the disastrous loss in former years, have shown a remarkable recovery. Additionally, it is hoped that the experiment of releasing Chukor Partridge will, in the years to come, afford good sport.

Pheasants are to be found plentifully in certain districts, and especially around Brooks, where this splendid sporting bird seems quite at home and well established. On the other hand, where heavy bush prevails their introduction has not met with any success.

FUR PRODUCING ANIMALS

The total number of pelts taken during the fur year, extending from July 1st, 1938, to June 30th, 1939, amounted to 2,273,826, and the total revenue from the sale of furs amounted to \$1,345,129.78. The number of pelts taken indicates a great increase, but the per capita returns show a decrease per pelt, with a total valuation greater than the year previous.

The Department has continued the close season on Beaver in the southern part, and permitted Beaver trapping in the north only in certain districts, and to assist local trappers and their families during a period of economic stress. That the need for protection is most necessary is a fact, and the only hope of conserving this valuable fur-bearing animal is by stringent measures for enforcement of close season and control of illegal marketing.

FUR FARMING

The fur farm industry continues to increase. Farmers now discover that this aid to diversified farming is of great economic assistance. The number of licensed farmers in the Province as at July 31st, 1939, has reached 1,060, an increase of recorded fur farms of 207. The value of animals on these farms exceeds a million and a quarter dollars. Indeed, I am safe in suggesting that Alberta now ranks as one of the foremost provinces in the Dominion as a producer of ranch raised animals of excellent quality and stock. The increasing interest in fur farms has been aided in every possible way by advice, assistance and care through the efforts of this Division. The general public has afforded close co-operation, and the reaction of those interested indicates complete approval of the programme and assistance afforded thereto.

PROVINCIAL GOVERNMENT EXPERIMENTAL FUR FARM

Those interested in the educational feature of this unit comprise visitors from districts covering the whole Province, and it is an acknowledged fact that the farm itself is an interesting factor of great value to those whose business it is to raise fur on their farms. The service rendered becomes yearly more apparent. When the farm itself is more firmly established, with stock of a more varied nature, it undoubtedly will serve the public well. In addition to foxes of various varieties, as well as mink, the farm now has nutria and beaver. It is hoped to raise other species as time permits.

Fur farm field days have increased rapidly. Centres for demonstrating and pooling information, with experts appointed to grade live animals exhibited, prove very popular throughout the Province. Many fur farmers travel long distances to be present at such exhibitions.

BOUNTY ON TIMBER WOLVES, TIMBER WOLF PUPS AND COUGAR

The big game areas contiguous to the National Parks suffer to some extent by the policy of the system in safeguarding all wild life, irrespective of their habits. Cougar and wolves, cunning predators that they are and knowing no boundaries, whilst raising their young in security quickly react to this protection. The increase of these varmints is reflected in the payment of bounties, which has risen greatly. It is to be noted that the payments of

bounty on the aforementioned are heavier in the districts approximating the parks than elsewhere. The following bounty was paid:

154 Timber Wolves at \$5.00	\$ 770.00
337 Timber Wolves at \$10.00	3,370.00
19 Timber Wolf Pups at \$2.00	38.00
19 Timber Wolf Pups at \$5.00	95.00
60 Cougar at \$20.00	1,200.00
Total	<u>\$5,473.00</u>

The total number killed in the year previous was 400, and the amount paid out amounted to \$2,549.00.

DESTRUCTION OF CROWS, MAGPIES AND GOPHERS

It is apparent that whilst there is a record of fewer crows to be found, as a general rule that is not a fact in so far as magpies are concerned. This dangerous pest has increased abnormally. Prior to 1930 this bird was found only in fair numbers, and that south of the North Saskatchewan. Since then they have been found in increasing numbers as far north as Grande Prairie. Wherever slaughter houses are found, this bird hovers around. The cunning wariness of the bird and his propensity for flesh makes him an undesirable in the truest sense. Small insect-eating birds and song-birds suffer heavily during the fledgling stage. Hence it is essential that every farmer and school child should co-operate during the winter months to reduce this menace.

The result of the competition shows as follows:

Crows and Magpies	82,927
Gophers	782,296
Crow and Magpie Eggs	118,217
Destroyed by School Children:	
Crows and Magpies	60,644
Gophers	560,316
Crow and Magpie Eggs	98,104
Destroyed by Adults:	
Crows and Magpies	22,283
Gophers	221,980
Crow and Magpie Eggs	20,113

Amount paid in prizes totalled \$4,647.00, an increase of \$459.00 over the previous year.

FISHING

It is with pleasure I append additionally my report anent fishing conditions in the Province. The report covers the period from April 1st, 1939, to the end of the fiscal year, March 31st, 1939.

Commercial fishing during that period fluctuated as between fair to good, depending on market conditions. So much of the product produced in this Province is exported, so that when the markets in the United States have a surplus from nearer eastern provinces, the price drops quickly to a level where profitable enterprise is impossible. In spite of all the information obtained from market reports, fishermen throughout the country refuse to give up fishing, and when the limit of production placed on the lakes to secure perpetuation of the species and to safeguard from depletion is taken, demands for the re-opening of the lakes become so persistent and imperative that it is found impossible to refuse.

Each district has its own difficulties, and to meet market conditions new regulations to secure an orderly production and marketing were introduced, and to prevent glutting and waste.

Mink farming operations and other fur farming activities now consume the entire coarse fish production, and together with local markets and domestic use by Indians and settlers, stabilize the

product, with fair return to the producers in so far as the market is concerned in Alberta.

The total amount of fish produced reached 7,242,746 pounds, with a marketable value of \$463,357.24. This indicates an increase of 1,040,829 pounds. In spite of the greater production, however, by over one million pounds, the marketable value was reduced by \$1,384.64, reflecting the aforementioned conditions of poorer markets as a whole.

Sport Game Fishing.

Conditions were reported as much better, excepting in the early spring, when floods prevented anglers from obtaining full creels. The Highwood, Castle, Waterton, Raven and Kananaskis River afforded excellent results, but fishing west of Rocky Mountain House and in the Edson district was very poor. Pollutive agencies, forest fires and illegal infractions are probably the greatest agencies for poor fishing conditions extant. It is hoped that these menacing conditions will, in the future, be controlled in a greater measure.

Equipment.

Fishermen carried on, generally speaking, with equipment already obtained and no new boats were launched, excepting at Lesser Slave Lake. Two large ice houses were built, and a few mink farmers built small ice houses or freezers to take care of surplus fish stocks and to carry on their food supplies where fishing was not permitted.

Commercial Fishing.

As has already been outlined, the commercial take was larger, with poorer prices paid. Lesser Slave Lake continued exceptionally productive. Lake Newell, Buck and Pigeon also produced heavily. Other lakes were fairly steady in production, excepting only Lake Wabamun, which has for many years been too heavily fished to permit continuance of even fair returns.

During the summer permission was granted to open a few lakes where resorts are found, so that holiday tourists might add to their enjoyment in that fresh fish was available close at hand. This measure was extremely popular throughout.

Whitefish still heads the list as the species which is caught most heavily, closely followed by Pickerel and then Pike.

Markets.

The deplorable heavy marketing of fresh water fish without concern for consumption reacted very unfavourably. The returns to fishermen were scant, and some distress in all districts was observed. Every effort is made to assist the professional fisherman by the release of information obtained from the import centres.

Domestic Fishing.

Many farmers find pleasure and profit in fishing through the ice, both with lines and with nets. The returns generally amount to only sufficient for a few meals per week; in the aggregate, however, a large poundage of fish is used. During the past year the amount so caught and used amounted to 190,000 pounds, with a valuation of \$9,500.00.

Indian Fishing.

Additionally, the rights of Indians are safeguarded in accordance with the Natural Resources Transfer Act by the release of

free permits allowing net fishing in those lakes where such fishing is allowed for their own use, but not for sale or barter. The approximate amount so caught reached almost the million pound mark, or actually 912,000 pounds, with an approximate value of \$45,600.

LICENSES AND PERMITS ISSUED

		Decrease	Increase
Domestic Licenses	257		65
Fisherman and Commercial	2,296	636	
Angling Permits sold by Fisheries Division	5,358		895
Angling Permits sold by Forestry Division	149	24	
Indian Permits	940		129
Boat Licenses	27		2
	<u>9,027</u>	<u>660</u>	<u>1,091</u>

Net increase over year previous 431, or a total net increase over the three-year period of 878.

Angling.

Fish caught by angling is estimated as follows:

	Pounds
Trout	201,000
Rocky Mountain Whitefish	85,000
Arctic Grayling	41,000
Goldeye	5,000
Pickereel	70,000
Perch	306,000
Pike	386,000
Sturgeon	1,000
Chub	5,000
Total	<u>1,100,000</u>

A net decrease of 297,300 pounds, with an approximate value of \$55,000.

Observance of the Regulations.

During the period of this report successful prosecutions for infractions of the Act numbered 86, a reduction of 54. This is due to the fact that there is now a healthy respect for the requirements of the conservation measures. The enforcement of protection for all classes of fishing continues to be carefully undertaken. Generally speaking, those who are habitual offenders have at last seen it does not pay, for the confiscation of their licenses and gear puts them out of business.

Fish Culture.

Details of the distribution from the various hatcheries into waters outside the National Parks follow:

LESSER SLAVE LAKE HATCHERY

Whitefish Eyed Eggs	52,140,000 distributed in 12 lakes
Pickereel	8,328,000 distributed in 11 lakes
Whitefish Fry	2,000 distributed in 1 lake
	<u>60,470,000</u>

—an increase of 8 new plantings.

GAME FISH FRY AND FINGERLINGS DISTRIBUTED BY HATCHERIES

Banff Hatchery	939,000
Waterton Hatchery	334,428
Total	<u>1,273,428</u>

NUMBER OF PROVINCIAL WATERS STOCKED

Fry	1
Advanced Fry	62
Fingerlings No. 1	33
Fingerlings No. 2	1
Fingerlings No. 4	7
Total	<u>104</u>

REPORT OF THE POULTRY COMMISSIONER

(C. W. TRAVES)

The poultry industry of Canada, and that of Alberta in particular, showed a very healthy general position at the beginning of 1939. The markets, especially for eggs, did not go quite to the bottom shown for some years previously, and held up fairly well for a longer period of time than was usual. This gave general encouragement, with the result that the poultry population of Canada increased approximately 10% and that of Alberta approximately 15%. Hatcheries in Alberta enjoyed the most consistent volume of business throughout the entire hatching season experienced for some years, and price cutting was practically nil, resulting in relatively high levels for the better class of hatching eggs received. Exports of eggs and poultry meat, particularly the latter, to the British markets showed decided gains at prices giving assured reasonable profits with every indication of still larger demands from that market to be filled. Prices of grains and other poultry feeds were relatively low and assured the better class producers a reasonable return for their products. The general betterment of Provincial urban and rural conditions, coupled with better crops and higher general prices for all agricultural production, materially boosted the home markets.

All these conditions did not mean that the poultry industry of Alberta was proving a heavy gold mine to all classes of producers, but meant better conditions than those which had been prevailing for some years, and created a general spirit of optimism amongst the producers and the members of the trade. Even the certainty that war would come had little, if any effect, and exports continued to British markets in gratifying volume.

Then war came and with it the decision of the British Supply Board to cut off the shipments of eggs and poultry meat from Canada. This completely disrupted the trade channels for a while, but prices held generally firm for some time. The original decision was modified to the extent of allowing Canadian exports up to 25% of pre-war volume, and shortly afterwards was again modified to allow up to 50%. With the present high prices for other meats it cannot be justly stated that at present price levels for poultry meat or eggs can in any way be considered as a luxury. The fact that they are on the menus of practically all sick, wounded or convalescing persons should mean increased convenience for Canadian eggs and poultry meat to the British markets and not the present hampering conditions. Every Government in Canada, Dominion as well as Provincial, should back the trade interests in their present struggle to get for poultry products at least equal recognition as those prevailing for other farm products.

The Canadian turkey market deserves special mention at this time. True, the export situation looked none too bright and the supply looked more than ample for domestic markets, but when the trade interests met at Winnipeg to consider the prices to be paid, they apparently lost sight of several very important facts. In the first place, a large percentage of the prairie turkeys, due to a late

spring, were late hatched and would not be ready for the Christmas and New Year markets. In the second place, other meats were much higher than at this time last year and economic conditions quite a bit better than at this time last year, meaning an increased demand for turkeys, not as a holiday luxury but as a necessary part of the Christmas meal. These conditions would also mean that the larger birds would be more in demand than during the past few years. Quite true, we have improved our turkeys to the point where we are getting a surplus of the larger birds, but the trade interests made a serious error in starting out by cutting all birds over 15 pounds by 1c per pound. The fact that the demand for birds 16 to 20 pounds was exceptionally good, most of the trade disposed of the largest percentage of their stock of over 16 pound birds for the same price as they obtained for those under 16 pounds, and towards the end of the season raised the price on the heavier birds, proved they made a poor guess. As usual, the producers were the losers.

NEED FOR MORE MARKET CONTROL

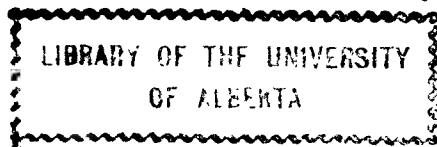
Our 1938 report pointed out the things brought into the open by the licensing of dealers in poultry and poultry products. With the advent of general better conditions for farm produce, a healthier market condition and an increase in the poultry population, Alberta experienced during 1939 a corresponding increase in the number of poultry dealers, mostly with a flat pocket-book and a reputation leaving much to be desired. Unfortunately, the "alien situation" following the declaration of war kept the members of the R.C.M.P. unusually busy, and enlistment and transfer of Dominion inspectors minimised somewhat the effect of the regulations and allowed certain persons to go unchecked. However, the regulations have proved their worth.

The 1938 report pointed out the need for an "Alberta Poultrymen's Act." The year 1939 has strengthened our view very materially on this matter, and it is to be hoped that this six million dollar Alberta industry (and it can quite easily become a twenty million dollar one under favourable conditions) will soon receive the Act and regulations thereunder that it deserves. Procrastination will not build up any industry. The Government of the three Prairie Provinces have conferred together regarding live stock licensing and other live stock matters. Why not on poultry?

At the last session the Alberta Department of Trade and Industry put through "The Alberta Marketing Act," and now have a poultry committee at work under its provisions. Well and good, but that does not minimise one iota the need for an "Alberta Poultrymen's Act" as enabling legislation for regulating dealers, hatchery approval, disease control, etc. Only when Alberta's poultry industry is considered as such and is put under its own Act and regulations will increasing millions in profits come to Alberta's farmers for this phase of agriculture.

BLOOD TESTING AND FLOCK APPROVAL

It was felt that the Tube Agglutination Test as conducted since the advent of blood testing was not the most efficient or economical for the average conditions prevailing in Alberta. During the latter part of 1938 and to the end of July, 1939, we carried out 2,784 comparative tests between the Tube Agglutination Laboratory Test



and the Whole Blood Agglutination Test as conducted on the farm. We proved to our own satisfaction that we should change over to the latter method. Discussion of the results obtained with some of the leading Canadian and American Pathologists at the World's Poultry Congress and Exposition at Cleveland, Ohio, and at the Dominion-Provincial Conference at Ottawa, confirmed our opinions. The majority opinion was in our favour, and advocated the use of the Whole Blood Agglutination Test for the control of Pullorum disease in poultry for Alberta. Ottawa has officially recognized this method of testing for Alberta for the 1940 hatching season, and we are at present conducting approximately 5,000 comparative tests with them at their Lethbridge Laboratory. In addition to the poultry tests, all Alberta turkeys banded under Alberta Record of Merit were blood tested by the comparative method.

This year the maximum allowance of reaction was set at 4% without the necessity of a retest. The co-operation of the breeders in general with our programme has been very encouraging.

We have been gradually tightening up on the body type, housing and management of our flocks for hatchery approval and on the R.O.M. for turkeys. The results of this improvement work is clearly demonstrated in the improvement in grades of the dressed poultry being marketed by the producers. Also we have consistently advocated to our hatching egg shippers the use of R.O.P. and pedigreed males. Their response has been very gratifying, and the result has been a large increase in the number of R.O.P. sired flocks and in the number of R.O.P. flock entries for 1939 and again for 1940 in Alberta.

JUNIOR ACTIVITIES

There has not been the increase in the Junior Poultry Clubs that we would have liked. The comparative blood test work, general flock improvement, regulations, etc., have kept the Poultry Branch staff busy, so that we have not had much time to devote to the juniors. Unfortunately the Districts Agriculturists and the supervisors of the Extension Branch and Boys' and Girls' Live Stock Clubs are not for the most part very well acquainted with poultry problems, and as a result are not very poultry minded, resulting in very little support from these services. However, a good field day and competition was held in connection with the Edmonton Exhibition, and good classes and competition were held at the Calgary and Edmonton Poultry Shows. It is hoped that a definite sum will be allotted from some source so that junior poultry club activities can be carried out along specified lines.

POULTRY SHOWS

Unfortunately, the war has resulted in the cancellation of the Toronto Royal, but at both the Edmonton and Calgary Exhibitions and Winter Poultry Shows, better poultry exhibits than usual were shown. The junior classes at these shows showed marked improvement, and should become a real feature once junior work is on a definite programme.

Alberta was not able to send a Provincial exhibit to the Seventh World's Poultry Congress and Exposition held at Cleveland, Ohio, and only two Alberta poultrymen sent exhibits to the Competitive Section. Both took top places in their classes, which was a splendid showing.

PROVINCIAL POULTRY PLANT

We obtained during 1939 four much needed new brooder houses and four range houses. These will materially assist in the raising of better young stock. The ground lay-out of the farm has been rearranged with the idea of cleaning up the unfavourable brooding and rearing conditions that have existed for some years.

The results of the ventilation and heating experiments carried out at the Poultry Plant have convinced us that artificial heat must be supplied, especially for the breeding flocks, if the best results are to be obtained. What we consider to be the best means of supplying proper and adequate ventilation and artificial heat have been incorporated into a complete new set of single and double-deck laying house plans available to the poultrymen of Alberta. Plans for the new brooder and range houses at the Plant are also available. As funds and time are available, additional experimental and breeding work will be carried out at the Plant.

For 1940 we intend to co-operate with Ottawa in the new Cockerel Distribution Policy of attempting to have the hatching egg shippers purchase day-old cockerel chicks and raise them themselves, rather than purchase mature birds late in the year. Where they do not wish to do so, we intend to sell as many twelve week old cockerels as possible, in this manner eliminating a lot of trouble experienced when shipping mature birds during the cold weather.



Young turkeys on range at Provincial Poultry Plant, showing plenty of wind-break shelter, mash-hopper space, outdoor roosts and shelter house for wet weather.

REPORT OF THE PROVINCIAL APIARIST

(W. G. LE MAISTRE)

Spring and early summer weather was too cool and wet to permit colonies to reach maximum strength for the honey flow. The main honey flow began, in most districts, during the first ten days of July, and was heavy until the end of the month. There was little nectar available for the rest of the season. The termination of the honey flow in July is thought to have been the result of an absence of rain in July and August. The low humidity and absence of moisture had a favourable effect on the quality of the honey.

Experienced beekeepers, to some extent, offset the unsatisfactory spring weather by feeding their colonies. They also anticipated and prevented swarming, which had a weakening effect on many colonies not so controlled. Thus, in spite of a short season, some beekeepers had a normal crop. Most beekeepers, however, did not have their colonies in good condition till near the end of the flow, with the result that they harvested only from a half to three-quarters of a normal crop.

Many colonies have gone into winter quarters light of stores. This resulted from the absence of a fall honey flow and the difficulty in obtaining sugar for feed. The temporary limitation of the sugar supply, occasioned by the international situation, coincided with the fall feeding of colonies.

PRODUCTION

	1938	1939
1. Number of beekeepers	1,090	1,589
2. Number of colonies	15,230	18,000
3. Honey produced, lbs.	2,418,000	2,178,000
4. Average per colony, lbs.	159	121
5. Average wholesale price to producer (net), per lb.	7c	7c
6. Value of honey	\$169,300	\$152,460
7. Beeswax produced, lbs.	33,000	28,300
8. Average price of beeswax to producer	27c	27c
9. Value of beeswax	\$8,900	\$7,600
10. Total value, honey and beeswax	\$178,200	\$160,000

There is a 24% decrease in the average production per colony during the 1939 season, when compared with the 1938 crop. But the total production for 1939 is only 10% less than that for 1938 because there has been an increase in the number of colonies in the Province.

The quality of the honey was excellent—high density and very light in colour. Nearly all samples examined graded "No. 1 White," which is the highest grade in domestic trade.

MARKETING

In July the commercial producers of Southern Alberta quoted an opening price of \$4.25, based on a case of six eight-pound cans (48 lbs. net). Early in August offers far below this figure caused a revision of this price to \$4.00 per case. Most sales of commercial honey netted \$3.90 to \$4.00 per case. By November there were only a few cars of honey not sold. Contrary to the usual trend, the producers who held their honey realized more for it than those who rushed it onto the market in August. Recent advices indicate an increased demand for honey and a slight increase in price.

About 90% of the honey harvested is offered for sale in August. The need for realizing cash by so many men at the same time

makes the market highly competitive. Since the quality is quite comparable, deals are usually made on a price basis. Independent offerings of small lots by sideline producers often have the effect of unnecessarily lowering the price.

Shipments of honey into Alberta from Manitoba have had a depressing effect on the price of the local product. Prices in Manitoba for the last few years have been very low, as much as 30% below Alberta. The formation of a co-operative marketing organization in Manitoba and world conditions have combined to lessen the effect of Manitoba honey on the Alberta markets this year.

A trial shipment was purchased for an account in Dublin. It did not go forward, however, when war broke out.

A revision of freight rates to Vancouver, effective this year, gives Alberta producers a slight advantage over Provinces to the East. British Columbia might become an excellent market for Alberta's exportable surplus. Alberta honey has difficulty in competing in the United Kingdom and other European markets with honey from the more easterly Provinces enjoying lower freight rates.

DISEASE CONTROL

	1938	1939
1. Number of apiaries inspected	289	1,021
2. Number of colonies inspected	4,305	6,423
3. Number of colonies diseased	65	319
4. Percentage of inspected colonies diseased	1.5%	5%
5. Percentage of registered colonies diseased	.42%	2.1%
6. Number of beekeepers registered	747	1,589
7. Number of colonies registered	10,959	15,419
8. Number of beekeepers not registered (estimate)	348	900
9. Number of colonies not registered (estimate)	4,270	4,200
10. Percentage of beekeepers not registered (estimate)	47%	36%

In comparing the results of the disease control work for the years 1938 and 1939, it will be noticed that the 1939 figures show very much improved results. This was made possible by the increase in the grant made to this Branch.

In 1939, 330% more apiaries were inspected than in 1938. Only 33% more colonies were inspected in 1939 than in 1938. The inspection service was concentrated on the smaller and less experienced beekeepers, those that would be less likely to be aware of disease. This, of course, involved a higher cost per colony for inspection. That this action was justified is demonstrated by the fact that a much higher percentage of diseased colonies (5% as compared to 1.5%) were discovered amongst those inspected.

The percentage of diseased colonies is alarmingly high. It is alarming because a diseased colony is almost a complete loss and because this disease is so readily spread to other colonies.

Two outbreaks previously unreported were discovered in C.D. 6 and C.D. 10. These outbreaks have been controlled, though some reappearance can be expected. A serious outbreak was discovered too late in the season to be effectively controlled in the area surrounding Patricia.

Six part-time inspectors have been employed. This Branch is seriously handicapped in not having sufficient trained men available for the work. Two new men were trained this year. The per colony cost of inspection would be materially reduced if a trained man could be established in each district to work part-time. Under present conditions it is necessary for an inspector to cover territories a long way from his base. The result is that travelling expenses are high.

Twenty-three microscopic diagnoses of samples of disease sent in by beekeepers were made. Dr. Shaw of the University was kind enough to permit the use of a microscope for this work.

All beekeepers are required to register. Registration assists in locating beekeepers for inspection purposes and supplying statistical information. A special effort was made to obtain a complete list of those keeping bees. Only about 64% of those listed as being beekeepers have registered. Some of those who have not registered are known to be beekeepers. It is estimated that only 53% registered in 1938. Thus, 11% more beekeepers have complied with the regulations in 1939 than in 1938.

EXTENSION

Slightly over one thousand copies of the bulletin entitled "Beekeeping in Alberta" have been supplied to those requesting it.

Twenty-six meetings, at which instruction was given, were held at various centres. The attendance at these meetings totalled 980. District Agriculturists were responsible for organizing some of these meetings. A five-day short course was given, with the kind co-operation of the University authorities, at Edmonton. This course had an average daily attendance of 68.

Pertinent market information was disseminated amongst secretaries of local associations and key-men in different districts.

The duties of Secretary-Treasurer of the Alberta Beekeepers' Association are undertaken by this Branch. Special services, largely of an advisory nature, were supplied to a committee working on the formation of a co-operative marketing association.

Honey judges were supplied for two fairs.

REPORT OF THE SUPERVISOR OF AGRICULTURAL RELIEF

(JOS. FICHT)

Relief Seed, Feed and Fuel Oil.

Crop conditions in 1938 were such that every district in the Province produced sufficient feed to carry over a normal number of live stock on farms and ranches. It was therefore possible to completely discontinue the distribution of relief feed. The winter of 1938-39 shows a very encouraging contrast to previous seasons, when it was necessary to distribute large amounts of feed and fodder for winter maintenance of stock. It appears that the present winter, 1939-40, will also be passed without the necessity of a feed relief policy, as feed supplies are normal in almost every part of the Province.

The Provincial Government considered it advisable to give some assistance in the provision of seed grain in the spring of 1939, as certain districts had suffered hail losses repeatedly or had experienced drought in previous years, followed by hail or partial losses by drought. It was necessary to include part of the Peace River district where crops were almost a complete failure as a result of drought. In parts of the Special Areas where drought re-occurred in 1938, relief seed distribution was administered by the Special Areas Board under the Provincial Department of Lands and Mines.

Owing to the localized nature of the seed relief problem in 1939, no financial assistance was given by the Dominion Government. It was therefore necessary for the Province to guarantee the banks against losses on loans made to Municipal and Local Improvement Districts. The policy was extended to a total of 22 Municipalities and 32 Local Improvement Districts.

Owing to the fact that practically all of the 1938 wheat crop was marketed through the Canadian Wheat Board, it was necessary to arrange with the Board for the purchase of supplies. Wheat of the higher commercial grades was supplied to applicants at a price based on the May future, plus handling charges and storage from March 1st to date of delivery, less Fort William or Vancouver freight. Other grains were purchased from farmers or grain companies at a premium of 5c over the regular commercial price quotations. It was necessary at a few points to use oats which were shipped in by the grain companies, and in such cases the price included shipping and handling charges.

A few of the Municipal Districts made provision in their Agricultural Relief by-laws for supplying tractor fuel to applicants who depended on power farming equipment. Fuel oil was also supplied in several of the Local Improvement Districts.

The following statement shows the various commodities and the amounts supplied in the 22 Improvement Districts:

WHEAT—		BARLEY—	
Bushels	12,308	Bushels	120
Value	\$6,364.01	Value	\$31.56
OATS—		FUEL AND LUBRICANTS—	
Bushels	6,168	Gallons	12,073
Value	\$1,379.59	Value	\$7,681.90

Total value of all commodities, \$15,457.06.

Each municipality was required to keep account of the details of distribution, under orders authorized by the Provincial fieldmen. Guarantees were arranged for bank loans totalling \$66,500 for the 22 municipalities participating.

Details are not available regarding the exact net expenditures under these guarantees, as purchases were made direct by each municipality, with the exception of wheat, which was obtained by the Provincial Government, as indicated above.

Distribution of wheat purchased from the Canadian Wheat Board for 1939 seeding is shown in the following table:

	Bushels	Value
22 Municipal Districts	39,661	\$19,532.03
32 Improvement Districts	12,308	6,364.01
Special Areas (Distributed by Special Areas Board)	8,704	4,569.90
Total	60,673	\$30,465.94

As in previous years the accounts in connection with the distribution of seed relief were kept by the Seed Grain Collection Branch of the Department of Municipal Affairs. The outlook for the spring of 1940 is very favourable. It appears that no district is in need of relief feed, and almost every district will have a satisfactory supply of seed. Losses through hail were covered in most cases by at least partial insurance with the Hail Insurance Board, and this fact will enable farmers to make provision for their requirements without further assistance.

Relief Settlement Plan.

Assistance under this plan for settlement on the land of suitable families who would otherwise be in receipt of direct relief was continued during 1939. Enquiries were numerous during the year, and although several applicants were unable to qualify under the terms of the agreement, there was a slight increase in the number of families placed during 1939 as compared with the previous year. Placements in each year since the commencement of the plan are as follows:

Year	No. of Families
1932	51
1933	314
1934	223
1935	63
1936	32
1937	53
1938	141
1939	149

Total 1,026 families
comprising 4,804 persons.

Abandonments under this plan have totalled 348 (34%), but of this number only 157 can be considered failures. Of the remainder, 8 have enlisted, 94 obtained other employment, and 89 abandoned, due to change of circumstances.

Applicants during 1939 were placed from the following districts, in the numbers shown: City of Edmonton, 17; City of Calgary, 44; other towns and municipal districts, 29; unorganized territories and transient relief, 59.

The Advisory Board, consisting of representatives of the Dominion and Provincial Governments and the C.N.R. and C.P.R. Departments of Colonization, is responsible for approval of applicants and lands, and held 54 meetings during the year 1939.

The majority of settlers are making a real effort to provide homes for their families on the farms, and are progressing very satisfactorily. The records show 346 families self-supporting at this time, and a few of these have already made substantial repayments.

REPORT OF THE DIRECTOR OF JUNIOR WORK

(W. J. ELLIOTT)

BOYS' AND GIRLS' CLUBS

Again we are enabled to record an increase in the number of Junior Clubs in the Province. Grain clubs have increased from 97 to 105 and live stock clubs from 55 to 62, or a total increase in all clubs of 15. This is a safe normal growth. There are requests for live stock clubs from several points for next spring. These will be dealt with during the winter with a view to seeing how and by whom they may be organized and cared for. These requests come from Sangudo, Stony Plain, Bon Accord, Metiskow and Amber Valley.

There is always an urge by those who are interested to increase the number of clubs, simply because they realize the wonderful improvement in grain and live stock in those districts where clubs have already been established, but there is a danger of getting ahead of proper supervision, which may lead to disappointment.

If a movement could be started by which many of those graduating from clubs might, with a little special training, be enabled to act as district club leaders, it would assist the Department of Agriculture to reach out further. This is being considered at the present time.

Naturally the club emphasis this fall has been directed by the requests that have been received from the Agricultural Committee at Ottawa in the interests of war requirements. The general statement issued so far is that emphasis should be placed on a steady improvement in the quality of all farm products, with special stress on bacon and cheese. Both of these, of course, are influenced by a strengthening and improvement in our dairy herds.

In so far as possible, other requests that are made necessary by war conditions will be passed on to the junior members, for we believe that the organized clubs of the Province constitute one of the quickest, most efficient and most readily available methods of introducing new, or modifying existing, agricultural practices.

JUNIOR LIVE STOCK CLUBS

Beef Clubs.

Beef clubs show an increase of six over last year. Some clubs, however, that were reported as very weak have been revived, and six new clubs organized at Nanton-Parkland, High River, Balzac, Lake Thelma, Sundre and Cremona. This branch of club work is very active, and is proving to be a valuable contribution to Alberta's beef industry. Over 500 boys and girls took part in the Feeding Contests, and exhibited the finished animals at the Junior Shows, which were very creditable indeed.

There is, however, one phase of this work that will have to be guarded against. In previous years, packers and others attended the comparatively few shows and sales that were held to show their interest and to encourage the work. This year, however, it was difficult, particularly in the outlying districts, to get a fair bid and price for the quality of the animals offered. We believe that

in future it might be better to bring the animals into the stockyards or some central point after the show is held, where there might be more active competitive bidding, due to the fact that the sale would be available to so many firms, without the expense necessary to travel considerable distances to attend.

Dairy Clubs.

We are trying to put Dairy Calf Clubs on a very substantial basis. Many clubs in the past have been organized with such dairy calves as were available among the members, and in many cases these were of very questionable quality and promise. In the past two years eight new clubs have been started, and with all these the calves were secured from the Edmonton and Calgary milk sheds, where many dairymen have, by careful selection and breeding, built their annual herd production up to from 8,000 to 10,000 or more pounds per cow. The following clubs have been furnished with the number of calves indicated:

Graminia—17 Holsteins from Edmonton Milk Shed.
Camrose—31 Holsteins from Edmonton Milk Shed.
Smoky Lake—28 Holsteins from Edmonton Milk Shed.
Camrose—12 Ayrshires from various points.
Eckville—22 Ayrshires from various points.
Springbank—31 Holsteins and Jerseys from Calgary Milk Shed.
Olds—39 Holsteins partly local and partly Calgary.

Thus a total of 10 heifers, from dams producing at least double that of the ordinary Alberta dairy cow, have been placed in the hands of Dairy Calf Club members.

Vilna would have been organized also had we been able to get the calves, and we have at the present time orders for 50 Holsteins and 20 Ayrshire calves for additional placement.

One very important feature of this work is the encouragement to juniors to keep milk, fat and feed cost records of the home herd. This is already under way with two clubs, and more groups are expected to undertake this task during 1940.

Swine Clubs.

Four of the 34 Swine Clubs have discontinued—two of these because of drought and feed shortage in the Peace River, and two because they have more or less served their purpose in the district with a real improvement in the quality of hogs, and the club members desire to take up some other activity. However, two more Swine Clubs were added at Beaverlodge and Sunnybrook. Of the five points desiring clubs for next spring, four have asked for Swine Clubs. There is no question of a doubt about the general effect of Swine Clubs in the Province, and the general hog improvement that has followed wherever they have been established.

Poultry Clubs.

Nothing definite has been done as yet about the establishment of Poultry Clubs. In discussing this matter with the Poultry Commissioner, we have been informed that with some contemplated developments in that Branch, assistance may be available so that a start with Poultry Clubs may be possible.

Provincial Club Championships.

Beginning the week of November 20th, 169 Alberta clubs began to run off their preliminaries and semi-finals, with a view to selecting the teams that should represent the clubs on the 24th of

November for the championship of the Province in the Grain, Beef, Dairy and Swine Divisions.

There were in all 22 teams gathered together for the semi-finals, and Lethbridge produced a dairy and swine team, with a grain team from Foremost, while Calgary sent a grain team from Airdrie and Lacombe a beef team from Lacombe itself, a dairy team from Didsbury and a grain team from Camrose. In the Edmonton section, St. Lina furnished the beef, Camrose the dairy and Falun the swine, with the grain team coming from Drumheller.

It is worthy of note that the Central Dairy Contests were held on the farm of Mr. H. E. Elwell, at Blackfalds, Alberta. One may realize the pleasure for the contestants in holding the competition in a farmer's barn where there were 50 cows, and every one with a production record of over 15,000 lbs. of milk.

In the final contest at the University Farm there were four grain teams and two teams each from the beef and swine, and three from the dairy divisions.

Thus were brought together teams representing 3,000 club members in the Province, and as might be expected there was keen competition right up to the very end.

In view of the fact that the Toronto Royal Show was discontinued for this year, the Provincial Government arranged for scholarships that would assist the winners to attend one of the Schools of Agriculture. In the beef division the Lacombe team, consisting of Geo. Trelfell and Chas. Blackmore, won top honours. In the swine division, Eleanor Rattray and Ellen Stone, of the Prosperity Club, secured first place, and in the dairy division, Edwin Patching and Bert Parry, of Lethbridge, were declared the winners. In the grain section, Robert Wood and Stan Gould, of Camrose, were placed at the top.

The thanks of the Department of Agriculture is extended to the officials of the University Department of Agriculture and the Dominion Department, and to all others who assisted in conducting the final contests.

Needless to say, this club work, which is scattered over the Province, is largely the result of the encouragement and continual watchfulness on the part of the District Agriculturists. In fact, it is difficult to see how it could be carried on at all without the guidance, help and instruction of these men, many of whom have been long years in the service of the rural interests of the Province.

AGRICULTURAL CAMPS

Agricultural camps, established some years ago in connection with a number of the A and B Class Fairs and under the sponsorship of the Provincial and Dominion Governments, continue to be very popular, and the applications for admission to these courses is always far in excess of the number that may be accepted. Under this plan a limited number of boys and girls are enrolled in a course of from two to four days, and become the guests of the Agricultural Fair. Dormitories are provided and, of course, these and the classes are conducted under strict and careful supervision. The boys receive instruction in Agriculture and the girls suitable training in Domestic and Home Science. Part of the course is taken up in the inspection of all exhibits at the fair, and with the

pleasure and entertainment provided the whole course is designed to be helpful, instructive and a real holiday.

Camps are sponsored jointly by the Agricultural Fairs concerned and by the Dominion and Provincial Governments. The fair provides the facilities, the Provincial Department of Agriculture the instruction and supervision, and the Dominion Department of Agriculture assists with the financing.

Alberta held seven such camps, one each at the two A Class Fairs at Edmonton and Calgary, and five at B Class Fairs, including Vermilion, Vegreville, Camrose, Red Deer and Lethbridge.

The fairs held last year with the attendance of boys and girls at each were as follows:

Fair	Boys Attending	Girls Attending	Total
Edmonton	36	19	55
Calgary	45		45
Camrose	38	38	76
Vermilion	67	78	145
Vegreville	51		51
Red Deer	32	32	64
Lethbridge	45	28	73
Totals	314	195	509

LIVE STOCK CLUBS

The number of Live Stock Clubs during 1939 was 62, as compared with 55 in 1938. A list of the clubs with the enrolment in each follows herewith:

SWINE			
Swalwell	14	Radway	12
Spedden	18	Neerlandia	15
Taber	16	Egremont	13
Coronation	16	Bashaw	13
*Wembley	15	St. Lina	19
Falher	19	St. Paul	15
*High Prairie	18	Northern Valley	17
Pathfinder	23	Liberty	16
Pendryl	13	Telfordville	14
Falun	11	Carnwood	9
Vilna	38	Bellis	20
Warspite	20	Smoky Lake	25
Lethbridge	23	*Myrnam	25
Boyle	17	Moon Lake	14
Colinton	19	Edson	15
Derwent	30	*Donnelly	20
Sunnybrook	20	Beaverlodge	20
Total number of members		612	
Total number of clubs		30	

DAIRY CALF			
Didsbury	31	Olds	39
Camrose	29	Camrose	16
Smoky Lake	11	Lethbridge	33
Springbank	31	Graminia	20
Vilna	25	Eckville	23
Total number of members		258	
Total number of clubs		10	

BEEF FEEDING			
Nanton-Parkland	19	Castor	16
Simons Valley	23	Sundre	21
Red Deer	41	Grainger	22
Crossfield	20	Vilna	28
Olds	33	Lacombe	33
Bellis	18	Scollard	27
Innisfail	47	Lethbridge	17
N. Edmonton	28	Balzac	22
St. Lina	20	Silver Heights	12
High River	33	Lake Thelma	18
Byemoor	18	Cremona	35
Total number of members		551	
Total number of clubs		22	

*These clubs are discontinuing as Swine Clubs, but may be reorganized in some other form.

SUMMARY LIVE STOCK CLUBS						
Number of Clubs			Membership			
	1937	1938	1939	1937	1938	1939
Swine	31	24	30	Swine	514	655
Beef	12	11	22	Beef	275	292
Dairy	2	10	10	Dairy	35	205
Totals	45	55	62	Totals	824	1152
						1421

It is encouraging to note the progress that has been made in the Live Stock Clubs.

JUNIOR GRAIN CLUBS

In 1939 there was an increase of grain clubs in the Province from a total of 97 to 105. An effort is made to limit clubs to a number that can adequately be supervised. In 1939 there were 74 wheat clubs, 23 oat clubs, 7 barley clubs and one flax club.

Junior Grain Clubs are administered by the Department of Agriculture, and assisted financially by the Dominion Government and the following sponsoring organizations: Alberta Wheat Pool, Calgary; United Grain Growers, Ltd., Calgary; Canada Malting Company, Calgary; and the Alberta Linseed Oil Company of Medicine Hat.

Sufficient registered and certified seed of a suitable variety is provided for a three-acre seed plot for each member. Standing crop competitions, seed fairs and grain judging competitions are keenly contested. High standards of achievement are set and high crop ideals are formed.

How successful these clubs have been in reaching the height of perfection is shown by the fact that six of their members have already won World Championships in wheat and oats at the International Hay and Grain Show at Chicago. This year at this great show Junior Club members won first and championship as well as third award in wheat; first and championship as well as second in oats, and first and third awards in six-rowed barley. Out of 18 Alberta winnings in wheat, 12 were by Junior Club members; of 14 Alberta winnings in oats, 10 were by Junior Club members, and of the 7 Alberta winnings in six-rowed barley, 4 were by Junior Club members. We acknowledge the earnest work carried on by the District Agriculturists in leading, inspiring and supervising grain club work in their various districts.

The project of 1,500 eager farm youth all working together for crop improvement has proved a happy idea, and has established a basis of sound cereal production throughout the Province. In addition to crop improvement, the educational value deserves more recognition that is generally attributed to it. Club work has often brought out hidden possibilities of the farm boy never dreamed of before. They develop leadership and foster the co-operative spirit in community enterprise. Many boys get their first inspiration for attending a School of Agriculture through club work. And so these young men, just on the threshold of life, imbued with an urge for high accomplishment, find ample scope for their possibilities.

REPORT ON THE DOMINION-PROVINCIAL YOUTH
TRAINING PLAN(W. J. ELLIOTT, *Supervisor*)

Under this scheme the Department has two fields of training for boys and girls from 18 to 30 years of age:

1. Training under various agricultural projects for boys.
2. A co-operative training programme with the Extension Department of the University of Alberta.

Under the first division the Department is offering training to necessitous youth, who are not gainfully employed, in certain phases of Agriculture, where there is a reasonable hope of the youth becoming established for himself. The opportunities offered are as follows:

1. Training in Schools of Agriculture for 20 necessitous boys from the drought area, and 20 necessitous girls from the drought area.
2. A second year's course at the Schools of Agriculture for the 12 boys and girls standing highest in last year's course.
3. Training 120 necessitous boys from towns, cities and villages on poultry, market garden, fruit and fur farms, also on apiaries and in creameries.
4. To meet the Provincial regulations concerning the grading of both poultry and eggs, classes were conducted in Edmonton and Calgary to train young men for this particular work.
5. Training is also offered to a limited number of boys who were graduates of the Agricultural Schools to train in up-to-date creameries with a view to finding an opportunity in this field.

The above are training or apprenticeship courses whereby the youth secures instruction and actual work in his project so that he may become proficient with a view to starting a business for himself.

We are not dealing with as large numbers as is the case with some other projects, but we feel that we are actually placing in self-supporting positions a large percentage of those who are accepted in the scheme. Great care is necessary, for the boys have to be placed in the homes of their employers for board and room, and naturally that introduces problems that are vital both to the home and to the boy.

We are greatly encouraged by the large number of successes among the boys. This is particularly true on fur farms. Here the boys find an attractive business, and as a rule take to it very readily. The fur men have also met the situation splendidly, and in many cases give the boy a start with a fox or few mink, as a bonus, at the end of the year.

The market garden, fruit and apiary schemes are naturally seasonal, but we believe there is worth while opportunities there as well. At least 12 of the boys training under this branch have enlisted.

In the second division, mentioned above, which covers the co-operative effort between the Extension Department of the University and the Department of Agriculture, a joint committee consisting of the three members from each Department controls and directs the work of Rural Youth Training.

These short courses are for rural boys and girls, and are given through 30 short course schools that are carried on for from two to three weeks at each point. The instruction is essentially

that suited to rural conditions for both farm and home, and in addition stress is laid on community enterprises, leadership, economics and citizenship.

Many of the students living within a short distance of the centre drive in to attend the lectures and demonstrations, but a considerable number come from such wide areas that this is impossible, and for these, dormitories are established where the young people are under proper supervision.

In order to keep the cost of this training at a minimum, such organizations as churches, city councils and other community enterprises are freely providing buildings for class rooms, dining halls and dormitories, and in addition to this, students are allowed to contribute such farm produce as may be used in the dining room to assist in covering the cost of their board and room.

Each school is designed to handle 100 students. They seem to be striking a responsive chord among the young people, and seem to give them an incentive to go on further with their education.

REPORT OF THE EXTENSION BRANCH

(R. M. PUTNAM, *Director*)

The general economic improvement in agricultural conditions was reflected during the year by a greater interest in agricultural extension work. Not only were more gatherings held to discuss agricultural problems, but the attendance improved and there appeared to be a healthy desire for information on subjects of practical significance to the farmer.

Although the most popular topics related to production problems, there was a definite trend of thought toward the consolidation of production factors and community action for the solution of agricultural questions. This tendency was manifest in the formation of certain agricultural organizations to study these questions and find their answers.

An extension programme of any kind achieves far greater success when its efforts are matched by those of active local organizations, through which information is disseminated, discussion is engendered and the thinking of local people is brought to the fore. There is a shortage of local leadership, and greater leadership training facilities are an urgent necessity.

The increasing complexity of the agricultural industry and the need for keeping production costs at a minimum, suggest the need for a whole farm approach to farming problems. More consideration of broad, long time programme planning for the individual farm and the community is essential. Although the adoption of new technical farm and home practises must always be encouraged, there are many other fields in which an extension programme would be of great value. Agricultural engineering, home improvement and beautification are services that seem to be desired by rural people.

Grateful acknowledgment is tendered to the many individuals, institutions and organizations who so kindly assisted at meetings during the past year. Special appreciation is expressed to the members of the staff of the Faculty of Agriculture of the University of Alberta, and the staffs of the Dominion Department of Agriculture, Experimental Farms and other services. The whole-hearted and co-operative spirit displayed by the officials of the Department of Agriculture in the extension programme is also mentioned with appreciation.

PUBLICATIONS AND STATISTICS

Publications.

Nine new bulletins and three reprints of old bulletins were completed and published in 1939. These publications, together with many others, are available on request to anyone needing them. A list of the publications is given herewith:

- No. 1. Turkey Production in Alberta.
2. Equine Encephalomyelitis.
3. Warble Fly Control.
4. Beekeeping in Alberta. (Reprint.)
5. Tentative Suggestions for the Use of Fertilizer in Alberta.
6. Care, Feeding and Management of Swine.
7. Creeping Red Fescue.
8. Preservation of Fruits, Vegetables and Meats. (Reprint.)

9. Planning and Beautifying the Home Grounds. (Revised.)
10. The Production of High Quality Cream.
11. Planting Deciduous Trees and Shrubs.
12. Planting Evergreens.

In addition to technical publications, a bulletin on "The Functions and Services of the Department of Agriculture" was prepared and distributed with the Annual Report.

The plans of the new hog barn and brooder erected at the Olds School of Agriculture were printed for distribution.

In January, the regular "Statement of Agricultural Production" for the previous year was completed, and in October the "Autumn Survey of Agriculture" was prepared.

Ten crops reports were published during the crop season at two-week intervals, commencing on May 16th. The assistance of the many crop correspondents is gratefully acknowledged at this time.

Throughout the year the Department of Agriculture Notes were issued weekly, and the Junior Farm Club Bulletin was published quarterly.

A number of mimeographed sheets were issued on special timely or local subjects from time to time, dealing especially with Home Economics topics. Individual requests are numerous, and these are answered as well as facilities permit.

There is a need for information in bulletin form on farm buildings, ventilation, insulation and the like, while a real necessity exists for data on the care, feeding and management of beef and dairy cattle.

Radio.

The radio was used frequently. Officials of the Department appeared on the Farm Forum Programme over CKUA during the winter months. From January to May, and October to December, 1939, 21 talks were given, while on the Junior Farm Forum 23 periods were taken by the Department officials. The Department appreciates this opportunity afforded by the University station to discuss timely topics over the air.

Visual Instruction.

The visual instruction equipment was in almost constant use during the winter months, and was requested on many other occasions during the rest of the year.

The 38 movie films were shown 248 times, and the film-strips were used 223 times.

The movie projectors were used on 39 occasions, film-strip machines on 45, and slide projectors on 13 occasions.

During the year the Branch made ten new film-strips and one reel of movie film, and purchased from other sources two film-strips and one movie film.

The total equipment of this kind now on hand is three movie projectors, four film-strip projectors, two slide projectors, 63 film-strips, 36 movie films, and a number of slides.

Statistics.

The previous arrangements for the use and collection of the statistical data were continued with the Dominion Bureau of Statistics, to whom appreciation is offered for much extra assist-

ance. The greater demand for statistical information concerning the agriculture of Alberta makes it desirable that the Department lend further assistance in the collection of such material. Requests for statistical data on the agriculture of the Province are received in large numbers, not only from local sources, but from foreign countries as well. The publication of more statistics is needed, and it is hoped that a comprehensive statistical report of the Department may be completed soon and become an annual event.

Short Courses.

During the winter months of 1939, 36 short courses were held, 9 of which were two-day courses. These courses were organized by the District Agriculturist in co-operation with a local group who furnished the hall heat and light.

Attendance varied from 32 to 500, with an average of about 90.

The subject matter always included field crops and live stock, while at a number of points special phases of these subjects were considered, and at several meetings horticulture, poultry, beekeeping and fur farming were requested. At three short courses a special section was arranged for the ladies with gratifying results.

The greater attention being given to intensive agriculture rather than extensive operations is creating a demand for information on agricultural engineering, home beautification and other home problems.

Speakers were also provided for 23 agricultural meetings during January, February and March, in addition to the formal short courses. This figure does not include the much larger number of meetings which were addressed by the District Agriculturists only.

Short courses and meetings are considered one of the main phases of the winter extension programme. They permit farmers to come together to learn the latest information of technical agriculture and provide the opportunity of discussing their own problems. A discussion period is essential at all short courses and meetings.

To the many speakers at short courses during the year the Branch wishes to express appreciation, and to those organizations which assisted in sponsoring short courses it offers thanks and the desire to be of further service.

Field Days.

Seventy-four field days, excluding strictly Junior Club field days and Farm and Home Week at the Olds School of Agriculture, constituted the major activities of the Branch during the summer months. These popular events, combining as they do business with pleasure, make a special appeal to the whole family, and are valuable means of disseminating agricultural information.

Most field days are organized by the District Agriculturists in conjunction with a local representative organization, the meeting being held at some suitable farm where demonstration material is readily available. Those who offer their farms as meeting places are to be commended for their community spirit and desire to serve the industry.

The Department co-operated with the Dominion Department of Agriculture at a number of field days held at Experimental Farms, sub-stations or illustration stations.

A special event of the season was Farm and Home Week at Olds, a week set aside when farmers and their wives could visit the School of Agriculture, enjoy the pleasant surroundings and attend a series of lectures and demonstrations. The programme was devoted to field crops and horticulture on Monday; to Percheron horses, Shorthorn cattle, Ayrshire cattle and sheep and swine on Tuesday, Wednesday, Thursday and Friday respectively. Prominent speakers were secured and valuable support was given to this venture by the various breed associations. A special programme was prepared for the ladies.

The first attempt at holding horticultural field days and demonstrations was made this year at six points. Subjects pertaining to horticulture, home planning and beautification were discussed, and actual planting demonstrations were given. The emphasis being placed on home improvement was indicated by the interest taken at these gatherings.

A classification of the field days according to subject matter indicates the following: General 44, field crops and soils 9, dairy 6, horticulture 6, sheep and swine 5, miscellaneous 4. In addition, a lady lecturer was provided at 36 field days to speak to the women on home making topics.

All organizations holding field days in the Province were encouraged to advise this Branch of dates, so that unnecessary duplication could be avoided. It is gratifying to note that such advice was given in most cases, thus facilitating the planning of programmes.

It is a pleasure to mention, with much appreciation, the aid given at field days by officers of the Dominion Department of Agriculture, the University of Alberta, Breeders' Associations, the Dairymen's Association, and many others, including local farmers and business men, who provided valuable assistance.

Attendance at field days varied from 30 to over 400, the average being 140.

The use of field days to further other phases of agriculture is deserving of consideration, and the co-operation of commercial organizations who carry on educational campaigns might be solicited.

WOMEN'S EXTENSION WORK

The women's extension programme reached almost 8,300 women during 1939, through 263 lecture demonstrations and 244 groups who enrolled in the correspondence courses; 3,917 women attended the summer's demonstrations, while 4,371 members enrolled in the correspondence courses. These figures do not include the women who attended field days, girls' camps, Farm and Home Week, and Farm Women's Week.

The year's work commenced late in January, when 13 lecture-demonstrations were given to groups whose applications could not be handled in 1938. In March, visits were made to 20 Women's Institute Girls' Clubs for the purpose of suggesting programmes and generally assisting them with the valuable work they are doing.

The regular summer programme was begun in April when application forms for summer lecture-demonstrations were sent to 625 women's groups throughout the Province. Of these applications, 232 were returned requesting assistance, and out of this number 208

lecture-demonstrations were actually held, 24 having been cancelled for various reasons.

These lecture-demonstrations were arranged in eight itineraries, each itinerary being handled by a lady lecture-demonstrator. For this purpose, the women members of the staffs of the Schools of Agriculture were selected, and three extra lecturers were employed.

The Department also provided a lecture-demonstrator for the Ukrainian speaking districts for a period of three months during the summer, who conducted 36 demonstrations, and during special classes used 3,000 pounds of wool to spin and weave 213 quilts.

We were fortunate in having the services of Miss Eveline Le Blanc, Lecturer and Demonstrator of the Marketing Service, Department of Agriculture, Ottawa, who spent three weeks in the French speaking districts, giving lectures and demonstrations on health and nutrition. Miss Le Blanc conducted 19 meetings, and high appreciation for her valuable work was voiced by the residents of these areas.

At 36 field days a speaker was provided to speak to the women on some subject connected with home making. Our staff judged the women's work at 13 fairs, and we provided the matron and necessary supervision for three girls' camps held in conjunction with "B" class fairs.

The fall programme was undertaken in October when arrangements were made to provide correspondence courses to groups of women on "Rug Making", "Foods, Health and Nutrition", and "How to Buy"; 244 groups with a membership of 4,371 enrolled for the courses, which were sent out in the form of four lessons, the first beginning on December 1st.

The custom of sending lecture demonstrators on itineraries arranged over the Province from this office does not appear to be as effective as it should to meet the needs of rural women. It is felt that perhaps more effective use of the time and effort expended in this work could be obtained if the lecture-demonstrators were located at one point for the summer, and within a given district they could develop such projects as were required.

The women's extension work conducted by this Department requires more up-to-date equipment. Technical improvements in home and kitchen equipment make it necessary for the women's extension programme to keep abreast of the times if it is to compare with the educational activities being carried on by commercial concerns.

The climate of this Province limits the type of extension work that may be conducted during winter months. It would appear that any large scale programme of lectures or meetings would not be feasible during this season, hence the use of correspondence courses seems to be the only alternative.

It is hoped that organization of girls' clubs can be undertaken next year. Some progress in drafting regulations for this purpose has been made. A tremendous field is open for work with "teen" age girls.

The appreciation of the Department is expressed to all those ladies who so kindly co-operated with the Department in bringing the past year's programme to a successful conclusion.

SUMMARY		
Total number of applications for demonstrations	232	
Number cancelled	24	
Number lecture-demonstrations given		208
Supplementary lectures:		
Miss E. LeBlanc		19
Miss H. Romanchych		36
Total		263
Total attendance (approximately)		3,917
Average attendance	26.3	
Number of field days attended	36	
Judges for fairs	13	
Girls' Camp Supervisors	3	
Total number applications for correspondence courses		244
Total number of women enrolled		4,371
Grand total of women reached during year		8,288

AGRICULTURAL FAIRS

The year 1939 witnessed an increase in the number of agricultural fairs and renewed interest in their development.

The regular Class "A" exhibitions were held at Calgary and Edmonton, and six Class "B" fairs were conducted at Lethbridge, Lloydminster, Vermilion, Vegreville, Red Deer and Camrose. Thirteen Class "C" fairs were held at Olds, Benalto, Didsbury, Lacombe, Loughheed, Falher, Westlock, Waskatenau, Lousana, Priddis, Alix, Fort Vermilion and Wildwood, and five unclassified fairs were conducted elsewhere.

Grants on a restricted scale were made to "B" and "C" class fairs, while the "A" class fairs received assistance toward judges only.

The "B" and "C" class fairs enjoyed a successful year, nearly all of them reporting increased attendance and number of entries, making it possible in some cases to undertake a limited building repair programme.

A definite long time fair policy is desirable. As soon as possible, the Department of Agriculture and the fair officials should meet to draft such a programme. It is not in the best interests of the fairs themselves, or of the Province as a whole, to exceed the number of fairs that can be effectively operated, and although the importance of fairs is recognized, the programme can be overdone.

Almost every Class "B" and "C" fair is conducted by an Agricultural Society, and it is a welcome sign that a number of these societies, in addition to the fair, sponsored other community activities. These societies have an unlimited field for the advancement of agriculture and the improvement of rural communities.

School Fairs.

One hundred school fair centres were operated in 1939, although fairs were actually held at 97 points, three fairs having been cancelled. There was a reduction in the total number of exhibits, due in part to the policy of allowing only pupils in Grade IV or above to exhibit in the agricultural classes, but at a number of fairs it was apparent that a lack of interest was also responsible for the poor showing. Outlying districts seem to support school fairs better than older settled areas, largely because the people in the fringe settlements are not privileged to attend so many community activities.

The administration of the fairs was carried on in the regular manner from the Schools of Agriculture. In addition to the general

supervision, it was found possible to employ three lady supervisors for one month in the spring to visit schools with the men.

Garden seeds were distributed as usual, and 1,343 rooms took part in the school fair programme. Judging was done in September by five teams, three operating from Olds and two from Vermilion.

The annual School Fair Short Courses were held at Olds and Vermilion, with an attendance of 108 and 85 respectively.

School fairs are passing through a difficult period. The formation of the larger Division has tended to shift the responsibility of local boards to the Divisional Board, and the abnormal number of teacher transfers has also contributed to the difficulty. If the school fair is to serve a useful purpose in an educational way, teachers must be given a chance to obtain instruction concerning the classes and general matters pertaining to the programme.

Although the school fairs meet a need in outlying districts, there would appear to be areas elsewhere in the Province where some other type of programme for the rural youth might be more desirable.

The following is a summary of the school fair programme:

Northern District.—Amisk, Ardrossan, Barrhead, Beaver Crossing, Bellis, Brownvale, Boyle, Busby, Cadogan, Camrose, Clantonald, Clover Bar, Dapp, Daysland, Derwent, Fultonvale, Grande Prairie, Greenlawn, Islay, Kinuso, Kitscity, Marwayne, Mayerthorpe, Ministik Lake, Myrnam, New Sarepta, Rosalind, Round Hill, Sangudo, Sexsmith, Sturgeon, Tofield, Tomahawk, Thorhild, Treaty Hill, Valhalla, Vermilion, Vilna, Viking, Waskatenau, Wavy Lake.

Southern District. — Allerston, Coaldale, Coutts, Coalhurst, Cardston, Crossfield, Cochrane, Caroline, Calmar, Clive, Carbon, Didsbury, Duchess, DeWinton, Etzikom, Eckville, Foremost, Gleichen, Grassy Lake-Burdett, Hillspring, Iron Springs, Innisfail, Irvine, Jefferson, Lacombe, Leslieville, Leduc, Lethbridge District, Langdon, Kelvindale, Millet, Munson, Magrath, Mountain View-Leavitt, Manyberries, Naco, Nobleford, Oyen, Olds, Red Deer, Raymond, Rainier, Stettler, Springwater, Sundre, Standard, Stirling, Spring Coulee, Strathmore, Thelma, Tilley, Twin Butte, Vauxhall, Whitla-Winnifred, Wetaskiwin, Purple Springs.

REPORT ON THE DISTRICT AGRICULTURIST SERVICE

(J. R. SWEENEY, *Deputy Minister*)

Direction of the District Agriculturist service was transferred from the Live Stock Branch to the office of the Deputy Minister with the release of the Live Stock Commissioner for military service, shortly after the outbreak of the war. This branch of the extension work has gradually developed since its inauguration in 1917 when, in addition to the Schools of Agriculture, offices were opened at Medicine Hat and Sedgewick. At the present time permanent offices are maintained at 15 points and are located as follows, from south to north: Cardston, Lethbridge, Brooks, Calgary, Olds, Red Deer Stettler, Camrose, Thorsby, Vermilion, Willingdon, Westlock, Smoky Lake, St. Paul and Grande Prairie. In addition, a temporary office has functioned for several years during the crop season at Berwyn to serve the north Peace River area, and in the spring of 1939 a district man was stationed at Edmonton in the interests of the district from Edmonton west to Edson. The district agriculturist service, therefore, is now available to all of the more important agricultural areas throughout the Province.

There is probably no more important service to the rural public than that provided through these district offices, and results over the years have shown that the District Agriculturist has been thoroughly appreciated by the farmer. These field men, living and working amongst those on the land, are the Department's personal contact with the country, taking the various Department policies directly to the people, and assisting at first hand in solving agricultural problems that may apply to individual farmers or districts. The field of work of the district man is a wide one and requires a great versatility of agricultural knowledge and practical experience. It is essential that he shall be able to meet and deal with the farmer on his own ground in order to gain his confidence and efficiently represent the Department. Some of the services rendered through the district office are the following; making known to the farmer the live stock, field crops and other Departmental policies, and assisting with their administration; organizing meetings, short courses and field days in the general public interest; promotion of junior grain and stock clubs and assisting with youth movements generally, including school fairs within the district; assisting and advising individual farmers by correspondence and by personal visit, toward solution of all manner of farming problems; introduction to the district of new and desirable farming methods and practices; acting generally as the Government's agent to improve by all possible means the standard of agriculture in the Province.

Reports of the year's work in detail have been submitted by all districts, and following is a summary of each commencing with the most southerly, setting out the most important projects and activities and conditions peculiar to the district. The District Agriculturist in charge is named in each case:

Cardston District (C. O. Asplund).

Though early crop conditions were good, dry weather of July and August were responsible for poor yields, and grades were lower than average. Wheat acreage of the district was considerably reduced. Some damage from wind erosion occurred late in the season.

Feed conditions were greatly improved by September rains following the dry summer, and feed stocks are about sufficient for winter needs. About 7,000 head of steers were finished at a substantial profit and some increase of feeders is indicated. Movement of breeding sheep has been brisk, and stronger wool prices prevail. About 32,000 lambs are on feed. Practically 100 per cent. of horses were vaccinated against encephalomyelitis, and no cases were reported. The U.S. Government purchased 200 head of horses in the district for army remounts. Hog production is definitely on the increase, with a great demand for breeding stock. A number of hog raisers have built octagonal brooder houses and large Danish type hog barns.

Dairying has shown a decreased production for the year. The new co-operative cheese factory at Glenwood will be in operation in the spring of 1940 and should stimulate the dairy industry in that area. An active poultry association has been organized in the Pincher Creek district, popular breeds being Rhode Island Red and White Wyandotte.

Sugar beet production reached its highest peak this year when 262,336 tons were harvested, yield per acre being 12.22 tons. Estimated sugar output will be approximately 80 million pounds.

Through the 1939 season this office assisted in placing 11 bulls, 19 boars and 35 sows. Active Junior Clubs included two grain clubs, one swine club, and one beef calf club. Considerable time was devoted to judging of live stock at 12 school fairs during September. Five special dairy meetings were held, also numerous other farmer meetings. Youth Training Schools of two weeks' duration each, under the Dominion-Provincial Youth Training Plan, were held at four points during the winter months.

Lethbridge District (R. J. Milligan).

Precipitation for the year was 12.82" as compared with the average of 15.67". Grain did not fill properly, due to unusually dry conditions of July and August, and yields and grades suffered in consequence. Hay crops, especially alfalfa, were retarded in their growth, and both quantity and quality were not up to their usual standard.

Some fall soil drifting occurred east of Milk River, but in most areas strip farming is practised and has proved a solution of the problem.

There are a number of successful registered seed growers in the district, several of whom won awards at the Chicago International Hay and Grain Show. Forage crops have claimed increasing attention, and though the irrigated districts have relied quite entirely on alfalfa, mixed pastures are becoming popular. On dry land crested wheat grass continues to be favoured, though a good deal of creeping red fescue has also been seeded. Potato yields were down because of Bacterial Wilt, which took a heavy toll, the crop being sold

under permit and tagged for consumption only. Potato growers have formed an association to regulate various phases of the industry, such as purchase of certified seed in quantity. Peas and beans raised for the canning industry were not up to their usual standard.

The weed problem is a persistent one, especially in the irrigated districts, and requires special study. Those causing greatest concern are hoary cress, leafy spurge, knappweed, field bindweed and Canada thistle. It is anticipated that grasshoppers and cutworms will be on the wane in 1940, but increased damage may result from the sawfly and Say's grain bug.

Shipments of live stock from the Lethbridge stock yards show a decrease in marketing of horses and sheep, but considerable increase in cattle and hogs. Feeder cattle have been in strong demand during the fall, especially for the feeder associations, which provide a profitable market for home grown feeds. At least twelve bulls have been placed through the Bull Exchange Policy. Many lambs and ewes are on feed lots, and no increase in sheep is anticipated in 1940, though prices have been encouraging and markets strong. Marketings of hogs have increased 22%, and further increase in production is indicated. Farmers are improving their herds by addition of good gilts and the introduction of registered boars. A number of swine breeders have added approved hog brooders to their equipment.

Most of the Junior Club work is centred in the irrigated districts surrounding Lethbridge. One wheat club, one dairy calf club, one beef calf club and two swine clubs were supervised by this office. The Lethbridge dairy calf judging team won first place in the Provincial judging contest. This office assisted as usual with administration of the boys' and girls' camp at the Lethbridge Exhibition.

Brooks District (M. L. Freng).

Spring seeding conditions were good, but rains in June were excessive, with 6.05 inches for the month, which was approximately half of the total precipitation for the year. July and August were exceedingly dry, and dry land wheat yields were only from 5 to 12 bushels. Irrigated crops were normal. Many farmers had difficulty in meeting their obligations because of low grain and hay prices.

Purity and quality of grain of the district is improving through the introduction of a great deal of certified seed. The weed problem continues to be a serious one in irrigated areas, worst weeds being wild oats, Canada thistle, green foxtail and knappweed. Certain sections of irrigated land present soil problems from seepage and alkali deposit that requires careful handling and study.

Junior grain clubs at Brooks and Rainier were supervised from this office and had a good season. Assistance with judging was provided at several very successful school fairs. The short course sponsored by the Department and the Brooks Board of Trade was well attended.

Stock raising is an important phase of our agriculture on irrigation farms as well as on the range. There are now three feeders' associations in the district at Brooks, Bow Valley and

Scandia-Rainier, and through them large quantities of alfalfa hay and coarse grains were disposed of at a reasonable profit. About 30,000 lambs were marketed, many of these being finished on irrigation farms. More interest is evident in hog raising, and many gilts have been purchased and a number of boars placed. A considerable number of horses were shipped out, and there is increased interest in horse breeding. No cases of encephalomyelitis were reported this year.

Throughout the season there were many visitors at the Provincial Horticultural Station, which operates under supervision of this office. Various groups and organizations held field days and picnics on the grounds. The staff of the station were pleased to have as their guests the District Agriculturists and fieldmen of the Department for their one-day conference in September. The station again had an exhibit at the Calgary and Edmonton Horticultural Shows. Quite a number of farmers seek our assistance in planning and beautifying their home grounds.

The farm property connected with the station was withdrawn from lease, and is now operated by the Department through this office. A suitable rotation system is being developed to build up fertility and clean the land of weeds. Much local interest is shown in the Holstein cattle, Yorkshire hogs and Hampshire sheep that have been placed on the farm.

A separate report on the work of the Horticultural Station is made annually by the Horticulturist.

Olds District (The Olds School of Agriculture).

The work in this district is under the direction of James Murray, Principal of the School of Agriculture, with Hugh McPhail, a member of the school staff, as fieldman.

Weather conditions through the crop season were quite unusual, with a favourable seeding and germinating period, followed by excessive rains in June, the remainder of the summer being dry. Serious hail damage occurred around July 1st, some crops recovering later to give fair yields. On the whole, district yields were good and grades average.

Much time was given to the supervision of Junior Clubs. Last spring several clubs were taken over by the Calgary office along with the southern portion of this district, allowing this office to consolidate its efforts more effectively with Olds as the centre. Direction was provided to four grain clubs, three beef calf clubs, and two dairy calf clubs. Two new beef calf clubs were organized in the fall at Sundre and Cremona. A number of very successful field days were held, and where possible Junior activities were featured. A crowd of 350 people were in attendance at Beiseker field day, and the programme was rendered more effective through the use of loud speakers. Another feature was a Horticultural Day held on a farm near Olds, which was well attended and stimulated local interest in home beautification and fruits suitable to the district. Assistance in judging was given at four school fairs. Short courses were held at two points with a good attendance. Over 600 visits were made to individual farms. Help was extended from this office to the Boys' and Girls' Camps at the Lethbridge and Calgary Exhibitions.

Types of all classes of stock through the district are good on the average, and plenty of good sires are available. A number of applications for boars were taken under the Boar Exchange Policy and a few bulls were also placed by exchange. Swine production in the district is heavy, with many farmers increasing their breeding stock. An outbreak of swine disease was investigated by the Provincial Veterinarian, complete reports of which have not yet been released. Hog raisers are improving their housing and sanitary conditions, which may prove a big factor in reducing losses.

The Government Forage Crop Policy has been adopted by three municipalities, and it is anticipated farming methods will gradually be modified as farmers come to realize the advantages of including forage crops in their programme.

Calgary District (B. J. Whitbread).

A district office was opened in the old Courthouse building on May 1st. Through the spring and summer much time was spent in making contacts throughout the district by holding meetings and by personal visits, particularly with respect to Junior activities.

Junior Clubs are now an important feature of the work, there being nine grain clubs, four beef calf clubs and one dairy calf club. The Airdrie Wheat Club and Okotoks Oat Club won the Provincial trophies in their respective sections. Six school fairs were held in the district, this office being responsible for the stock judging. The Calgary Exhibition Boys' and Girls' Camp was supervised by the District Agriculturist.

The district is essentially a wheat raising area, other crops being supplementary with yields depending on seasonal conditions. Wheat yields this year were above the average for the Province, ranging from 15 to 20 bushels. There was some grasshopper damage, but the poisoned bait campaign and June rains brought this pest under control. Weeds are a serious problem in some areas, the most troublesome at present being hoary cress. Progress with introduction of the newer forage crops is rather slow.

Stock raising is especially important in the grazing areas of the foothills where there are many large ranches, though most grain farmers also have limited herds. Ranch cattle as a rule are fall fattened on cover crop prior to shipping out of the Province, or to finishing on grain in Alberta. Twenty bulls were placed under the Exchange Policy, the majority being Hereford. Though most farmers depend upon tractors for their power, many horses are raised for market. It was shown by a recent survey that 2,000 head from four to nine years old could be purchased from this district. There is a general increase in hogs for breeding, stock having been secured largely through the Dominion-Provincial Brood Sow Policy and the Federal Animal Production Service. There is a tendency toward increase of sheep production possibly because of improved pastures on abandoned lands in some sections. A number of very fine dairy herds find a good market for their product with Calgary dairy companies. The city also provides a good market for poultry products and encourages the maintenance of a number of large flocks that are blood tested and kept under excellent housing and feeding conditions.

Re-establishment of the Calgary office is much appreciated by the entire district. It has the full co-operation of all agricultural

organizations, including that of the Agricultural Committee of the Calgary Board of Trade.

Red Deer District (F. H. Newcombe).

Early crop conditions were good, with unusually heavy rainfall in June. Then followed relatively dry weather during July and August, but reserve of moisture was sufficient to produce average yields. Some frost damage in August and wet weather during harvest and threshing resulted in much low grade, tough grain. Yields of hay and forage crops were only fair.

Ten municipal districts are now included under the Forage Seed Distribution Policy, with 500 farmers participating, many of whom are working out suitable rotations. Fertilizer experiments on certain soil types were commenced this year at three points.

The Junior Clubs continue to be an important feature of the work. In this district there are three very successful beef calf clubs, one dairy calf club and four grain clubs. The Lacombe Beef Calf Club won the Provincial championship in the judging of beef cattle. The Boys' and Girls' Camp at the Red Deer Fair was supervised by this office. It was responsible also for the stock judging at seven school fairs.

Agricultural associations throughout the district have increased in number from 3 in 1938 to the present total of 16. A regional board was recently formed to co-ordinate their efforts. Some of the main projects of these organizations in the past season were: campaign for control of warble and bot flies, bacon production tests, and placement of several stallions.

Through the year a total of 80 agricultural meetings were held in the district, with an average attendance of 28. This includes two-day short courses at Kevisville and Alix.

A keen interest in horse breeding continues, though many new tractors have been purchased in the last year. Six stallions were placed under the Provincial Policy. Breeders of pure-bred beef cattle have had a satisfactory season, and considerable breeding stock has moved. Winter feed conditions are good, and some 3,000 head of beef cattle are in feed lots, most of these under feeding associations. Nine bulls have been placed under the Bull Exchange Policy. During the fall there was considerable loss in feed-lot cattle, mostly due to Hemorrhagic Septicemia. Steady improvement in the quality of dairy cattle and in their feeding and management is evident. The inclusion of a small flock of sheep in the mixed farming programme is gaining in popularity, and several thousand sheep and lambs are in commercial feed lots. This is one of the heaviest hog producing areas in the Province, and present trend is toward still further increase in breeding stock. Mortality of young pigs and even of older stock has been high, due partially at least to internal parasites. Through the district office, approximately 75 pure-bred boars were placed, also 85 gilts of select type. At least 100 good gilts were shipped out of the district.

This office enjoys a growing patronage both through personal visits by farmers and by correspondence.

Stettler District (A. J. Charnetski).

With the transfer in April of B. J. Whitbread from this office to Calgary, A. J. Charnetski was appointed to Stettler. Mr. Charnetski

is a former district agriculturist, having had charge at Myrnam for several years until that office was discontinued.

The crop season generally was unfavourable, very dry weather through July and August being responsible for low yields. Wheat suffered damage by root-rot, and in some areas grades were reduced by early frosts. There is much interest throughout the district in forage crops, and this office co-operated with A.I.A.'s in their forage crop programmes. Weeds continue in some areas to be a serious problem, especially wild oats. Interest in horticultural topics is growing, especially in small fruits. The A.I.A. at Craigmyle and the Horticultural Station at Brooks are considering the establishment of a local test station.

Expansion in hog raising continues, 22 gilts being placed under the Brood Sow Policy and a large number of boars under the Boar Exchange Policy. Hog raisers are more alive to the importance of good housing and management and prevention of disease. More than 60 bulls have been placed through the Bull Exchange Policy and 20 more by private deals. Though five colt shows were held, interest in horse breeding is lagging. One new stallion club was formed. The warble fly campaign has made good progress, and little trouble is reported amongst stock treated last year.

A good deal of time was devoted to work with Junior Clubs. Five beef calf clubs had good seasons, though selling calves by auction did not prove successful. It is planned to market co-operatively next season through the usual market channels. Supervision was given also to three swine clubs and six grain clubs. The Rumsey Grain Club deserves special mention, attaining almost 100% attendance for meetings through the season and having all samples prepared to exhibition standard for their seed fair. This office assisted with the instruction at the Red Deer and Camrose Boys' Camps held in conjunction with the fairs at those points, and was responsible for stock judging at three school fairs.

A total of 48 agricultural meetings were attended. Seven field days were held, highest attendance at any one point being 400.

Thorsby District (P. Wyllie).

On the whole, there was a fairly good crop season in this district in spite of dry conditions in late July and August. Average grain yields were higher than for the previous year. Hay crops were good, but forage seed crops unsatisfactory. Much grain is withheld from market anticipating higher prices, and most of the coarse grains probably will be fed on the farm.

One new horse club has been organized under the co-operative purchase plan, and several are reorganizing for another three year period. Nine bulls were placed under the Bull Exchange Policy. Many farmers are anxious to improve their herds, but lack the funds for purchase of pure-bred sires. Much time has been given to swine problems, and farmers assisted in locating and selecting of breeding stock. Hog raisers are seeking advice on swine management and on prevention and treatment of disease. Loss in young pigs has been very heavy. Quite a number of boars have been placed under the Exchange Policy. More farmers are interested in sheep raising to utilize forage crops, and were assisted in the purchase of pure-bred rams.

Wheat graded 1 to 3, some being damaged by the wet threshing season, which was prolonged into December. The main wheat variety is Red Bobs 222. Under the Forage Crop Policy 8,000 pounds of seed were distributed in four local improvement districts. An organization of forage crop seed growers has been formed, known as the Progressive Forage Crop Seed Growers' Association, with headquarters at Warburg. The Field Crops Branch has co-operated with the establishment of a seed cleaning plant, and it is expected that 25,000 pounds of seed will be cleaned this winter. This plant will also be available for seed grain cleaning. A series of fertilizer experimental plots with forage crops on grey soils has been laid down by this office under the direction of the Field Crops Branch, and farmers are keenly interested in results.

In the Junior work, this district had charge of six swine clubs and one wheat club. The team representing the Prosperity Swine Club won Provincial judging honours. School fairs were held at seven points, and the stock classes judged by the district man. His services were also in demand for several calf and swine clubs outside of the district and for supervision of the Boys' and Girls' Camp at the Edmonton Exhibition.

Miscellaneous agricultural meetings not included in the Junior activities numbered 51. These included 5 dairy meetings, 5 field days, 4 short courses, and 3 colt shows. Much information was sent out by letter and by distribution of bulletins and circulars. Total mileage travelled in the course of the year's work was 14,063.

Camrose District (J. E. Price).

The death of District Agriculturist H. W. Scott on September 23rd, after 22 years of service in the Camrose-Sedgewick field, is a loss from which the district will not soon recover. Mr. Scott was intimately acquainted with the farmers and their problems, and enjoyed the confidence and respect to a remarkable degree. He was the dean of Alberta's district men, having been in that particular service from its commencement in 1917.

Late in October, J. E. Price was appointed temporarily to the Camrose office, his efforts for the remainder of the year being devoted largely to completion of projects conducted through the year by his predecessor. Contacts were immediately made with the Junior Clubs, and three judging teams were coached for the Provincial contests. The team representing the Camrose Grain Club captured first place in the Provincial Grain Judging Competition.

Apparently the Department's live stock policies has been well advertised throughout the district, and a great deal of pure-bred stock had already been placed. Services of the office were in demand to the end of the year in securing good breeding stock under these policies, especially with respect to bulls of the beef breeds and Yorkshire boars and gilts.

Contacts were made with organizations at several points and winter short courses arranged. General correspondence with farmers has been heavy, and the office has also been responsible for the clerical work on the production records of the Camrose Cow Testing Association, also the feed records of the Camrose Dairy Calf Club.

Edmonton West District (J. E. Price).

This office was established at Edmonton early in the year with J. E. Price as Extension Fieldman, to serve that area west and north-west of the city to Edson and Whitecourt.

The Sangudo-Mayerthorpe area was inspected and favourably reported upon with respect to its possibilities for the production of alfalfa seed. Three thousand pounds of seed were distributed under the Federal-Provincial policy, mostly to members of the Seed Growers' Association of that district. Some very good catches resulted in spite of the abnormally dry season.

Much time was devoted to a survey of the entire district to determine suitable centres for Junior Swine Clubs. Clubs were organized at Moon Lake and Edson. The dairy calf club at Graminia continued to function, also the four grain clubs organized the previous season. Prospects are now favourable for forming a beef calf club at Evansburg.

Some attention was given to a farmstead planning and planting campaign. Mr. Lewis's farm at Winterburn was selected and demonstration planting was done.

Field days of general agricultural interest were held at Drayton Valley, Topland, Fort Assiniboine, Vimy and Stanger, and were well attended. This office assisted at the dairy field day at Westlock and also co-operated with the Sangudo Illustration Station in a field day at that point.

Interest in small local agricultural fairs was revived at two centres, Edson and Wildwood, where assistance was given with their organization and with judging. Three school fairs were held in the district, this office being responsible for the stock judging. This office also assisted at six school fairs of surrounding districts.

Since this is a newly organized district, a great deal of time was spent in making contacts, surveying the area for possible extension prospects, and in making known the live stock and other policies of the Department.

Vermilion District (The School of Agriculture, Vermilion).

District work is under the direction of S. H. Gandier, Principal, with the territory divided into two sections. Each section was supervised by a member of the school staff, N. N. Bentley in the west and H. W. Kitching in the east. This arrangement was found advisable, as the entire time of D. A. Andrew, former district agriculturist for the entire area, was required for his regular duties as Farm Manager and Animal Husbandman at the School of Agriculture.

In both divisions the fieldmen spent a good deal of time in the early season making contacts and a general survey of their districts.

The crop season throughout most of the area was not a favourable one except for hay crops. Very dry conditions following heavy rains in June reduced most grain yields to half a crop. This applies particularly to coarse grains, and stocks of grain for winter feeding are inadequate. Grasshoppers were responsible for some damage in small areas, and some concern is felt because of widespread evidence of the presence of the Hessian Fly, which may be a serious factor in wheat fields another year. Weeds are a perpetual problem, but it is encouraging to note a greater local interest in their control.

Some study was given to the large variety of soil types of the district, and plots were laid down at several points to demonstrate the effect of fertilizers on various crops and methods of tillage. Farmers generally have shown a great interest in the more recently recommended forage crops, and most municipalities are participating in the Dominion-Provincial Forage Crop Policy. More interest was evident in horticulture, especially in fruits for the farmer's garden, and in farmstead planning. Demonstrations in the planning of home grounds and in tree planting were held at several points.

Junior grain clubs were supervised at 11 points, and had a reasonably good season despite the very dry summer. One new swine club was organized at Borradaile, and swine clubs at Jarrow and Ranfurly and a beef calf club at Mannville are under consideration for next season.

Farmers are showing a keener interest in live stock improvement policies. Thirty boars were placed under the Boar Exchange Policy. The Bull Exchange Policy brought quite a number of good pure-bred sires into the district, replacing scrub bulls. Interest in horse breeding is maintained through a number of co-operative stallion clubs, with plans under way for four new clubs. Two new feeders' associations were organized. Though there is a good supply of hay and long feed, feed grain is limited, and farmers welcome advice on utilization of feed stocks on hand.

The Boys' Camp at the Vegreville Fair was supervised by N. N. Bentley, and both fieldmen assisted with all short courses at the School of Agriculture during July. Mr. Bentley had charge of a school fair circuit during September, which took him out of the district for a time. Thirteen field days relative to stock improvement, forage and cereal crops, and Junior Club work were held at the School of Agriculture, and several others at points throughout the district. Many inquiries are received by mail, and correspondence on all manner of farm topics is steadily increasing.

Willingdon District (Fred Magera).

Prolonged dry weather through the summer resulted in low grain yields, but grades were high. Winter supplies of both long feed and feed grain are limited.

Good progress is being made in improvement of live stock throughout the district. Six groups were organized for sow distribution, and a good numbers of boars placed under the Boar Exchange Policy. Several hog raisers have erected large Danish piggeries and hog brooders. In the Willingdon area there are a number of good hog breeders who have supplied upwards of 100 registered boars. Cattle are largely grade beef type, which also supply dairy products for home consumption. Approximately 45 bulls were placed under the Exchange Policy. Progress of work in the T.B. Free Area has been slower than expected. Several new pure-bred Shorthorn herds have been established. Two dairy improvement associations were organized. There is an upward trend in horse breeding, the Percheron being most popular. Several centres have secured good sires under the Co-operative Purchasing Plan, also 14 pure-bred Percheron mares have been brought into the district. Many horses were vaccinated against sleeping sickness. There is much room for improvement in poultry and in

management of flocks, and this office has done some work with that in view.

Ten farms of the district are producing registered and certified seed, for which there is a good demand. There is much interest in horticulture; six garden clubs were organized and a demonstration orchard established on the farm of Wasyl Zazula at Shandro.

Much time was spent in the Supervision of Junior Clubs. Eight grain clubs have done much to improve the standard of wheat and oats. Grain club members won 11 placings at the Chicago International Show. Title of World Oat Champion was won by Wm. Skladan of Andrew. Two Junior swine clubs operated in the eastern end of the district. This office co-operated with promotion of school fairs at two centres and with conduction of three Youth Training Schools. Assistance was also given with instruction at the Boys' Camp held during the Vegreville Fair. A number of parties were organized to visit outside points and events such as Demonstration Farm, Vermilion, Edmonton Spring and Fall Shows, meetings of Breeders' Associations, etc.

Westlock District (E. G. Wood).

Though this district experienced the dryest season ever recorded, some very good yields in all grains were obtained, wheat running as high as 50 to 60 bushels in some fields. Apparently the dry season had a beneficial effect on grade, a large percentage of wheat grading No. 1. Late threshing was caught by wet weather and was not finished until early winter. Forage crops suffered severely from the dry weather, and there is scarcely sufficient hay for winter feeding. Late fall rains provided a reasonable reserve of moisture for next season.

There appears to be a general desire to improve the quality of cattle. A large number of good herd sires have been placed through the Bull Exchange Policy, and females of all breeds, especially Shorthorns, have been purchased for foundation stock. One live stock improvement association was formed and two more are organizing for spring. A number of farmers are operating feed lots this winter. Considerable increase in hog production is indicated by demand for breeding stock, both boars and sows. Some excellent boars were obtained through the Boar Exchange Policy. A steady improvement in type of hogs raised throughout the district is quite evident. Losses in young pigs have been rather high, and there is a desire for information on treatment of hog diseases and on feeding and management generally. Nine stallion clubs are operating with encouraging results, and these are gradually eliminating the grade stallion.

Though Garnet wheat has been popular, it is rapidly being replaced by other varieties with better milling qualities. Considerable quantities of certified Red Bobs wheat and registered Victory oats were distributed for last spring's planting. Parts of this district are favourable for the production of forage crop seed, and quite a number of farmers are trying it out as a side line. More and more farmers are including forage crops in their programme. Under the Forage Crop Policy, 4,600 pounds of seed were distributed. A privately owned seed cleaning plant was established at Westlock, and growers had 170,000 pounds of forage seed cleaned for market.

This office co-operated with instruction at the Barrhead Youth Training School last winter and with judging at four school fairs. Five Junior grain clubs and three swine clubs had very good seasons. Assistance was given with the Boys' Camp at the Edmonton Exhibition.

Clerical work of the Westlock Agricultural Society and the Westlock Beekeepers' Association was done through this office. The Westlock Fair continues to grow, \$635 being paid out in prize money this year.

Smoky Lake District (Wm. N. Pidruchney).

Services of this office were in demand for assistance in locating live stock for breeding purposes, especially cattle and swine, and good progress was made in improvement of stock of all classes. Thirty bulls were placed under the Exchange Policy. There is a growing demand for pure-bred dairy cows. Considerable interest in production of good horses is evident. Two Percheron stallion clubs were formed, and clubs at three other points are contemplated. A successful Colt Show was held by the North Smoky Lake Club, which was organized in 1938. During the year good hog prices and an adequate supply of coarse grains for feed have greatly stimulated hog production. Twenty boars were secured under the Boar Exchange Policy, and as many more placed by private transaction. More intelligent hog feeding is being done as farmers realize the value of mineral and protein supplements. A number of modern hog houses have been built and others remodelled. Mortality of young pigs has been high, and hog raisers are adopting means for its control.

The necessity for inclusion of forage crops in the farm rotation is now quite generally accepted. All municipal districts of this area are participating in the Forage Crops Policy, and every encouragement is given by this office toward increased forage crops acreage. Weeds are a problem of growing concern, and approved methods of control are fast being adopted.

Much of the district man's time is devoted to Junior Clubs, and possibly no more effective work is accomplished than through his efforts with the boys and girls. This office has supervision of two dairy calf clubs, six swine clubs and nine grain clubs. It was responsible for the stock judging at five schools fairs, and co-operated with the organization of two Youth Training schools in the district.

Production of honey for home use has become a regular practice on many farms, and during the past season over 100 packages of bees were brought into the district.

This office has numerous requests for visits to individual farms to deal with all manner of farm problems, and service is given as far as time will permit. Two very successful short courses of two days each were held at Redwater and Thorhild. Valuable contacts were made through 35 farmers' meetings that covered the entire district. A good deal of time and attention is required for office correspondence, and much information is distributed by letters, circulars and bulletins.

St. Paul District (J. M. Fontaine).

Though rainfall for the district was slightly below that of the previous year, crop yields were higher because of more advantageous distribution of moisture in the growing months. There are good stocks of feed grain and hay for winter use.

Definite progress was made in the forage crops campaign, one municipal district and one local improvement district being added to the districts already participating in the Forage Crops Policy. Some considerable quantity of commercial fertilizer is now being used on depleted soils of the district, but in some instances it is not always applied to best advantage.

Much time was devoted to the live stock policies of the Department, and definite progress made toward general improvement of the quality of live stock throughout the district. Two new Percheron associations were formed under the Group Purchasing Plan, and six colt shows held by clubs organized last year. Six pure-bred Percheron mares were purchased by local farmers. Applications for bulls under the Exchange Policy numbered 31, and several beef herds were improved by the purchase of pure-bred cows. Dairy production continued normal despite low prices of dairy products. There is some indication of expansion of dairy herds in anticipation of a rise in prices. During the year sow holdings have increased about 40 per cent. Assistance was given in the placing of 64 boars and quite a number of pure-bred sows. Grade of hogs throughout the district is showing a steady improvement.

This district stands third in the Province for honey production, which is used mostly for local consumption. One hundred and forty packages of bees were distributed through the St. Paul and District Beekeepers' Association last spring, these going quite entirely to beginners in beekeeping.

Through the winter months eight short courses of one day each were held, with an average attendance of 67. Much time was spent with Junior Clubs, this office being responsible for supervision of four swine clubs, one beef calf club, and six grain clubs. Assistance in judging was provided at three school fairs. A party of 16 farmers got together for a motor trip of several days, visiting Experimental Stations and Government Farms in the district from Edmonton south to Calgary. The trip proved most interesting and educational for all who participated. This office finds it impossible to make personal calls at all farms requesting individual service. The district man is obliged to work with groups rather than with individuals, since available time is a limiting factor.

Grande Prairie District (W. S. Scarth).

Crop outlook for the 1939 was discouraging until the advent of heavy rains in mid-July, which saved the situation. Average yield of wheat was 21 bushels and oats 60. There is an abundance of winter feed. The red-backed cutworm was responsible for serious damage, especially in late sown crops. A control campaign involving three mixing stations for poisoned bait had very encouraging results and reduced anticipated damage very considerably.

Stocks of registered and certified seed from the limited crop of 1938 were practically all disposed of within the Peace River area.

Further honours came to this district as a producer of high quality grain when the World Wheat Championship was awarded to Lloyd Rigby of Wembley on his exhibit at the International Hay and Grain Show at Chicago. There is a definite need for better quality of forage than that supplied by wild hay, and steady progress is being made toward this end through the Federal-Provincial Forage Crops Policy. This year five new forage crop associations were formed in local improvement districts, supplies of seed being distributed through this office. In recent years the Wapiti district has established itself as a producer of alfalfa seed, having disposed of practically its entire crop in the past two seasons to the Department. An important step was taken this year toward the control of weeds by the appointment of a Field Supervisor for the area.

The Bull Exchange Policy has thoroughly proven its value as a means of improving farm herds. Quite a number of bulls were placed during the year; also several stallions through co-operative stallion clubs. A very successful horse sale was sponsored in March by the Grande Prairie Agricultural Society, and it is planned to make the sale an annual affair. With good feed supplies now on hand and the prospect of steady hog prices, farmers are planning substantial increase in hog production. A number of boars were placed under the Exchange Policy, and fall demand for gilts and breeding sows has been heavy. In the Beaver Lake district a community effort in treatment of cattle for warble flies has had good results. Though dairying is not a major pursuit, it has been developed successfully in certain districts, and this year a small co-operative cheese factory was established at Crooked Creek. Local demands are absorbing the entire product.

Short courses were held in February at three points, and were well attended. This office also co-operated with the Dominion Experimental Station at Beaverlodge with a series of meetings at outlying points. General field days were held at Debolt and Rycroft, and large crowds were present.

Because of feed shortage of the last two years, Junior stock clubs have almost suspended operations. Three grain clubs had good seasons, and held a joint field day at Beaverlodge Experimental Station. Wet weather and bad roads reduced the effectiveness of the three school fairs held in September. This office assisted with the organization of three Youth Training schools, interest in which was very gratifying.

North Peace River District (W. H. T. Mead).

The Department office for this district is located at Berwyn, and is active from spring to fall, being closed through the winter months. The service is effected by district and group meetings, field days, and through personal contacts. As much work as possible is done at outlying points amongst the newer settlers.

The crop season was unusually dry until the middle of July when heavy rains were responsible for a fair to good crop of good grade. Dry conditions through early summer were favourable to the development of the red-back cutworm, which was widespread and caused considerable damage in gardens and late-sown grain fields.

Garnet wheat is rapidly being replaced by other varieties, especially Red Bobs and Thatcher, neither of which would appear to be entirely suited to the district. Introduction of forage crops

is making good headway. One association was organized under the Dominion-Provincial Policy, with several other groups laying plans for next season.

Stock raising in some areas is handicapped by poor water supply. There are few breeders of pure-bred cattle and average of quality is low, though some progress toward improvement is now being made through the Bull Exchange Policy. Two Percheron and one Clydesdale co-operative stallion clubs were active this year, but too many grade stallions are still in use, especially in outlying districts. Many small farm flocks of sheep have been established, particularly with the object of keeping down weeds and utilizing low grade feeds. There is a definite movement toward improvement of hogs and a ready market for all stock available from the limited number of pure-bred swine herds in the district. Through the Boar Exchange Policy quite a number of good sires were placed during the year. A carload of pure-bred gilts was brought in under the Dominion-Provincial Sow Distribution Policy. Much interest is shown in approved methods of feeding and management of swine. As a rule, dairying is followed only with the object of supplying home consumption. Any surplus cream finds an outlet at the Peace River and Westlock creameries.

Some attention was given to Junior activities, a swine club being conducted at High Prairie, a wheat club at Berwyn, and an oat club at High Prairie. The two grain clubs combined with a very successful field day at Beaverlodge. Two school fairs were held at Brownvale and Kinuso, and assistance given in judging the agricultural classes.

REPORT OF THE OLDS SCHOOL OF AGRICULTURE

(JAMES MURRAY, Principal)

The closing exercises for the 1938-39 term were held on the evening of April 4th. The graduating class was the largest in the history of the school. In Agriculture, 68 diplomas and 7 certificates were awarded, and in Home Economics 44 diplomas and 2 certificates. The certificates may be exchanged for diplomas when certain high school credits are secured.

Mr. J. R. Sweeney, Deputy Minister of Agriculture, was present at the closing. He gave an inspiring address to the graduating class and presented the prizes.

Following are the names of the winners of the principal prizes and scholarships awarded during the year:

Gold Medals—For general proficiency:

Agriculture—Second year, Henry Stelfox, Rocky Mountain House, Two-in-One, Morton McElroy, Calgary.

Home Economics—Second year, Ethel Ferguson, Conjuring Creek; Two-in-One, Beryl Hawk, Parkland.

Wheat Board Scholarships of \$100.00 each to graduates in Agriculture who enter the B.Sc. course in Agriculture at the University of Alberta—Cecil Ander, Kathryn; Walter Anderson, Kathryn; Morton McElroy, Calgary; Lionel Perry, Balzac; Henry Stelfox, Rocky Mountain House.

Wheat Board Scholarship of \$100.00 awarded to graduate in Home Economics who enters the B.Sc. course in Home Economics at the University of Alberta—Helen Moseson, Wetaskiwin.

Wheat Board Scholarships of \$75.00 to first year students standing highest in General Proficiency:

Agriculture—Frank Allen, Penhold.

Home Economics—Christina Rickard, Millet.

Mr. A. L. Searle Scholarships of \$50.00 each awarded for progress in first year's work:

Agriculture—Wm. Godlonton, Calgary.

Home Economics—Alfhild Nerland, Seven Persons.

Girls' Alumnae Scholarship of \$50.00 for the first year student in Home Economics who made the best use of her educational opportunities, at the same time making contributions to the literary, athletic and social life of the school—Gladys Peterson, Magrath.

O.S.A. Experimental Union Scholarship of \$50.00 for a student in Agriculture on the same basis as the one immediately above—Ernest Warwick, Oyen.

We are grateful to those who from year to year cheerfully contribute to our prize list. The scholarships are a very real help to many students in completing their courses.

For the present term, which opened on October 18th, we have a satisfactory enrolment, as follows:

	Agriculture	Home Economics	Total
First Year	55	38	93
Second Year	25	18	43
Two-in-One	19	16	35
Total Enrolment			171

The dormitories are both full and we have about 15 students living out.

The enrolment of students in the Two-in-One classes is now limited by the calendar to 24 in each class. This will enable us to furnish better laboratory and work room accommodation.

Youth Training Students.

In our present class we have 23 students who are receiving some assistance under the Dominion-Provincial Youth Training Plan. Of these, 4 are taking second year work and 19 are in their first year.

Student Health.

Last year we were singularly fortunate in having very little sickness among the students. The only outbreak of consequence was influenza about the middle of March. For a few days we had over 80 ill. Most of them made a quick recovery, but a few required until the end of the term to regain their health.

This year we have taken precautions against Scarlet Fever and Diphtheria by having all susceptible students immunized. Nearly three-quarters of the students proved on test to be susceptible to one or both of these diseases. They are more than usually prevalent in the Province this year, so that the danger of introducing them is greater than in most years. Through the precautions we have taken we hope to escape an outbreak.

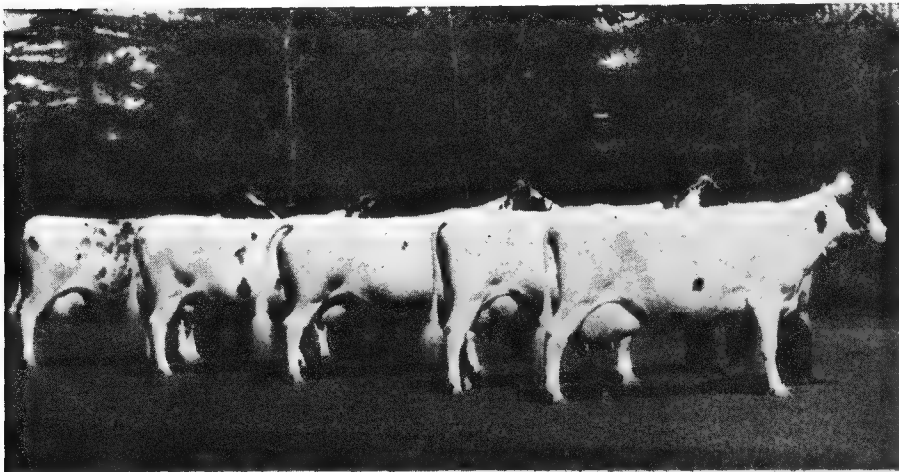
Library.

During the year we have been able to add nearly 200 volumes to the library. Technical books are of necessity bought direct from the publishers. We have been able to get some fiction and a number of other books from two circulating libraries in Calgary, who dispose of them cheaply after they have been in use a few months.

Summer Courses.

Farm and Home Week.—During the last week in June a group of five field days were arranged and carried through. With the exception of Monday, which was wet, they went off very successfully.

The programmes were arranged as follows: For Monday, farm crops and horticulture; Tuesday, Percheron horses; Wednesday, Shorthorn cattle; Thursday, Ayrshire cattle; Friday, sheep and hogs.



Part of the Herd of Ayrshires—Olds School of Agriculture

Each day several outside speakers were on hand to discuss timely phases of the subject that had precedence that day. The attendance varied from day to day. There were over 200 present on Percheron day, and a total attendance for the week of about 700.

Bleachers were erected on the north campus so that everyone could get a good view of the live stock parades, which were a feature of each day's programme. A public address system proved very useful to speakers in addressing the outside audiences. The dormitory was open during the week so that those who stayed for more than one day could be accommodated. One banquet and two evening meetings were held in addition to the programmes through the day.

School of Community Life.—This school carried on in co-operation with the Department of Extension of the University, holding its third session during the first two weeks of July. The attendance varied slightly from day to day, but about 70 were in regular attendance throughout the course. It was definitely the most successful school yet held, and one got the impression that it was established firmly on a permanent basis.

Other short courses included three which have been held regularly for a number of years. The Women's Institute Girls' Clubs met during the third week in July with an attendance of 70. Farm Women's Week was again very popular with about 75 registered. The short course for scholarship winners at school fairs had two representatives from each school fair, so that the total was just over 100.

A farm girls' camp was held in conjunction with the Olds Agricultural Society. As funds were limited, it was necessary to limit the number to 25. The 'teen age girls who came enjoyed the outing, and were greatly interested in the programme arranged for them by our Home Economics staff.

Experimental Union.

This organization had a very successful season. We had available in the spring an unusually good assortment of plants, seeds, and bulbs, and when the list appeared we were nearly swamped with orders. Over 700 collections were distributed, each parcel being made up of four lots. Following are a few of the things sent out to members: 246 4-pound samples of potatoes, 376 rhubarb plants, 768 crabapple seedlings, 633 plum seedlings, 720 packets of home grown vegetable seed, 966 flowering shrubs of various kinds. These will serve a useful purpose in improving the grounds of several hundred farmers in Alberta.

School Fairs.

School fair work was carried on at 58 points during 1939, and all but two points held fairs. The one at Castor was cancelled due to a wave of Infantile Paralysis, and the one at Pendryl due to road and weather conditions.

The 56 fairs included 701 rooms and a total of 15,640 pupils. A total of 44,09 exhibits were shown, an average of 787 per fair. The estimated average attendance at these fairs was 377.

While there are a few fairs which are not making as good a showing as we would like, this is largely due to lack of interest and

enthusiasm on the part of local fair officials. The people in general appreciate the value of the work, and are anxious that their children be given the benefits that it affords. Attendance at many of the fairs was affected due to delayed harvesting operations brought about by adverse weather conditions.

Field Husbandry.

We have continued a number of standard varieties of cereals in our variety tests, adding several that hold promise of being useful. Among the promising new oats may be mentioned Eagle, a variety originating in Sweden and introduced by the Experimental Farms. It suits this parts of Alberta in that it is slightly earlier than Victory or Banner, of good quality and with a particularly strong stray. There is nothing new among the wheats that have been recently introduced that are of special value to Alberta growers.

We again had on test about 20 new early wheats that are grown in co-operation with the Dominion Cerealists. Some of these may prove suitable for our conditions.

Breeding blocks of Creeping Red Fescue, Siberian Red Clover, and an unnamed variety of alfalfa were set out during the past year.

Several hundred farmers' samples were grown in co-operation with the Crop Testing Plan in rod rows and analyzed at harvest time. We also attended field days at Irricana, Airdrie and Innisfail to analyze farmers samples grown under the same plan.

Gray Soils Work.

Investigational and demonstrative work was conducted on 25 farms in the gray soil areas adjacent to Olds during the season. A field day was held in the Bergen district, where a decided interest is being taken in the work. A new departure in club work was made in the formation of a Junior Forage Crop Club in the James River Bridge district. There are 10 members in the club. Two meetings were held; each member seeded an acre of a grass-legume mixture, and the plots were judged in the fall. Addresses were given on soils at a number of other meetings during the year.

As the growing of forage crops, particularly legumes, is considered fundamental to the improvement and proper use of gray soils, a considerable part of the work has to do with the increase in yield and improvement of quality of the forage crops.

In the fertilizer experiments, gypsum and those fertilizer containing sulphur are proving to be of particular value when used on *legumes* on the gray soils. While gypsum is giving good immediate returns, its use alone is probably not a good practice, and in time phosphorus and potassium will also be needed. Nitrogen is the limiting plant food element in the growth of non-legumes on the gray soil, and it must be present in large amounts in all fertilizers to be used on this class of crops.

A carefully conducted test, as suggested by the Fertilizer Advisory Council, was made on a farm on the black soils. In this test the average yield of all the fertilized plots was 53 bushels per acre, while the unfertilized plots yielded 44 bushels.

Horticulture.

Fruits.—Olds is well situated to try out varieties of fruits for a large part of Alberta in that our high altitude, heavy soil and com-

paratively short season are factors which do not favour the tender kinds. Those which survive here can be depended upon to thrive in most districts.

We now have on trial 225 varieties of apples and crabs. In 1938, 35 bore fruit and in 1939, 42. Others are near the fruiting stage. Of those that have fruited, only about half-a-dozen are recommended for the average farm orchard. We are hopeful that other good varieties may be found among the others under trial. These have been secured through ordinary commercial channels, from the Dominion Experimental Station at Morden, and the Provincial Station at Brooks.

Of plums and cherries we have 45 varieties under trial. Of these, over 20 have produced fruit and are worth recommending. Apricots, pears and grapes are receiving attention, but as yet we have made little headway.

Twenty-four varieties of strawberries are being given a careful test for hardiness, productivity, quality and length of season. Raspberries, gooseberries and currants are being propagated and distributed to farmers to get them interested in fruit growing. Hedges of native or useful fruits are being established to show that we have not to depend for hedge material on caragana alone, and to show that fruit, flowers and protection can all be furnished at the same time.

Trees and Shrubs.—To show the value of many varieties of trees and shrubs to beautify farm homes, many new varieties are being introduced. We are building up a fine collection of lilacs, one of the most satisfactory shrubs, as it is perfectly hardy and comes in great variety. Evergreens have been given due consideration because of their beauty throughout the whole year. Altogether, we have over 100 different kinds of shrubs and trees under observation on the grounds, as well as several hundred kinds of perennial flowers.

Vegetables are grown extensively for use in the dormitory, for demonstration and for information. In 1939 special attention was given to peas and tomatoes, to find from among the commercial sorts those which are best worth recommending for this part of Alberta.

REPORT OF THE VERMILION SCHOOL OF AGRICULTURE

(S. H. GANDIER, *Principal*)

Following is the report of the Vermilion School of Agriculture for the year 1939.

Closing exercises for the 1938-39 term were held on the afternoon of April 4th, and brought to a close another successful school term. Attendance in the regular courses was slightly below that of the previous term, there being an enrolment of 149 as compared with 164 for the term 1937-38. Diplomas in Home Economics were granted to 20 girls and certificates to three girls of the Two-in-One course whose Grade XI standing was incomplete. Thirty-five boys received the Diploma in Agriculture, and four boys of the Two-in-One course received certificates, diplomas being withheld pending completion of Grade XI standing. Students and staff thoroughly appreciated the timely address of the guest speaker, Dr. G. F. McNally, Deputy Minister, Department of Education.

Three factors appear to be responsible for another reduction in registration for the regular term, which opened on October 18th. Drought in the latter part of the summer which resulted in disappointing crop yields, low grain prices, and the outbreak of war early in September, all have had a depressing effect upon attendance. Enrolment for the 1939-40 term is as follows:

AGRICULTURAL COURSES—	
First Year Boys	29
Second Year Boys	31
Two-in-One Boys	16
HOME ECONOMICS COURSES—	
First Year Girls	22
Second Year Girls	24
Two-in-One Girls	13
Total Registration	135

It is interesting to note the registration this fall of an exceptionally large Two-in-One class, both boys and girls. These are students who, by virtue of their Grade XI standing from high schools, are permitted to take a combination of first and second year work, completing the full course in one term.

Youth Training Students.

Included in the registration above-mentioned are 24 students, 12 boys and 12 girls, scattered through the various classes, who are receiving certain assistance under the Dominion-Provincial Youth Training Plan. The majority of these are from districts where crops were very poor, and none of the group could possibly attend the school without this assistance.

Peace River District Students.

The Peace River area is tributary to this school, but attendance from the far north has been somewhat disappointing in the past two years. This fall we have 14 from that district as compared with almost double that number three years ago. The school staff has little direct contact with this area, which possibly accounts in part for its comparatively small representation in the student body.

Scholarships and Prizes.

A generous list of prizes is available to all classes at the end of the school term. Donations from local business men, the Sommerville Co., Edmonton, the McCall Publishing Co., Toronto, the T. Eaton Co., Edmonton, the Singer Sewing Machine Co., Vegreville, the Robt. Simpson Co., Regina, the Alberta Women's Institutes, the Canadian Wheat Board Surplus Trust Funds, and others are gratefully acknowledged. Winners of the more important prizes follow:

Wheat Board Surplus Trust Fund Scholarships—\$75.00 scholarships to the first year girl and boy standing highest in general proficiency (toward expenses of second year).—Winners: Marguerite Slempe, Fleet, Alberta; George Currey, Vermilion, Alberta.

Five scholarships of \$100.00 each awarded to boys of the second year and two-in-one classes (towards expenses of the first year in Agriculture at the University).—Winners: W. James Brickman, Mannville; George P. Brinton, Vegreville; Allan H. Harrison, Tofield; Robt. G. Menzies, Provost; F. Lloyd Rigby, Wembley.

Scholarship of \$100.00 to a member of the graduating class in Home Economics (toward expenses of the first year in Home Economics at the University).—Winner: Irene Kroening, Lamont.

Alberta Women's Institutes Scholarship of \$50.00, to the first year girl making highest standing in the practical subjects of the course.—Winner: Leah Giebelhaus, Vegreville.

Vermilion Board of Trade Scholarship of \$25.00 to the first year boy making highest standing in practical subjects.—Winner: Elmer Landmark, Provost.

V.S.A. Alumni Association Scholarship of \$30.00 for a deserving first year student to make it possible for his or her return for the second year of the course.—Awarded to Velda Arthur, Auburndale.

Epidemics, Quarantines, etc.

As mentioned in last year's report, three cases of Scarlet Fever developed at separate times in the fall term, necessitating the quarantine of the students and staff for one week on each occasion. This trouble continued through the winter term, the school being quarantined for two similar periods before the closing in April. Fortunately an epidemic was avoided, there being only one case in close quarantine at any one time, though the persistent re-appearance of the disease was a constant source of worry and hard on school morale. In addition, there was an outbreak of Mumps, claiming 50 patients, also two cases of Chickenpox. One appendectomy case was taken to the Vermilion Hospital and made a good recovery. The school medical officer, Dr. J. J. Knoll, gave excellent and unceasing service during quarantines and epidemics, and no doubt prevented their spread to more serious proportions.

As Scarlet Fever cases were known to exist through the district this fall, it was decided to give students and staff the Dick Test and to inoculate all reactors. This has been done, and up to the end of the year no Scarlet Fever cases have developed; in fact, there has been no illness of any description beyond a few bad colds.

Mention might once more be made of the inadequate hospital accommodation at the school when we are visited with contagious diseases. They can be effectively dealt with only if there is hospital space separate from the main residence.

The School Staff.

Only one change has occurred in the teaching staff in the past year. With the appointment of Miss Eva M. Lee to the staff at Olds, Miss Vera D. Richards, a graduate in Home Economics of the

University of Alberta, was appointed as Assistant Instructor on the Vermilion staff.

Short Courses and Field Days.

Short courses were held as usual through the month of July as follows:

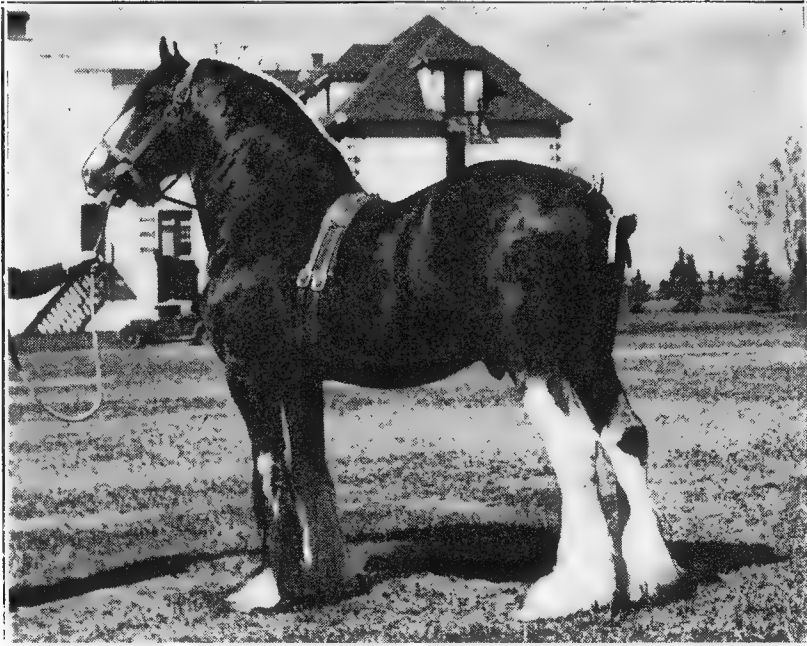
Farm Women's Week.—July 6th to 11th. Attendance in this course was almost doubled over that of last year, 81 ladies registering for part or full time. A feature of this course is the fact that some ladies return year after year. One member attended this year for her fifth time. As an experiment, dates of the course were selected with a Sunday in the middle of the course, and members were heartily in favour of continuing this plan in future courses, since it not only affords one day of complete rest, but also gives opportunity to many from remote rural points to attend Church service in town, which they are normally able to do only on rare occasions.

School Fair Short Course.—July 16th to 22nd. Registration included 41 girls and 43 boys. These boys and girls are exhibitors who obtained highest points at the school fairs in the previous fall. Sewing and cooking are the basis of instruction for the girls, while the boys give most of their attention to stock and grain judging, identification of weeds and insects, carpentry, and other practical topics. Every day is a busy one from early morning until bedtime. Quite a number of these classes return for the regular winter courses later on.

Vermilion Exhibition Camp.—July 25th to 29th. During the Vermilion Exhibition the school co-operates with the Vermilion Agricultural Society in the operation of its annual Boys' and Girls' Camp by providing accommodation and a short course in Agriculture for the boys and in Home Economics for the girls. Part of the time is spent in inspection of exhibits at the fair and in observation of judging of stock and home products. This year there were 66 boys and 18 girls in attendance. Since the camp members range in age from 13 to 20 years and are selected from all points in the area tributary to the Vermilion Exhibition, it is a splendid opportunity to introduce the school to the young people of the district.

Field Days, Conventions and Demonstrations. — Through the summer season a number of field days were arranged with live stock associations, grain clubs and others, and occasionally the facilities of the school were requested for conventions and meetings of various kinds.

The School gratefully acknowledges the co-operation of the following stock breeders of the district whose animals were available for demonstrations and field days and for special classes with the regular students: W. D. Williams, Clydesdales and light horses; Dr. W. H. Scott, light horses; W. L. Robinson, Shorthorn cattle; Wm. Barr, Holstein cattle; Manson Barr, commercial cattle. Other local concerns contributing to field day programmes or to other instructional work at the School are Burns' Creamery, Wiebe's Flour Mill, Vermilion City Dairy, and several elevator and implement companies.



Craigie Winsome Lad 26682, Clydesdale stallion, School of Agriculture, Vermilion.

Weather and Crop Season.

Conditions were exceptionally favourable during the forepart of the crop season, resulting in splendid early pasture and a hay crop above the average. Grain crops developed normally through May and on into June with little damage from frost-cutworms or other pests. After June 15th rainfall was insufficient for normal maturity of the crop, and yields were much below those anticipated. This applies particularly to grains of later planting. Approximate average yields for the immediate district were: wheat 15 bushels, oats 23 bushels, barley 20 bushels. The vegetable and root crop was very poor with little surplus of potatoes and other vegetables for sale. Total precipitation at this station for the year was 13.6 inches as compared with average annual precipitation for the district of 17.2 inches.

Extension Service.

In former seasons D. A. Andrew was official district Agriculturist for the entire district contiguous to the school, and because of his duties as farm manager the amount of district work accomplished was necessarily limited. This year Mr. Andrew was relieved of district duties, and direction of all extension work was placed under the principal. The territory was divided into eastern and western sections, and two staff members were appointed as district men, N. N. Bentley was responsible in the western area and H. W. Kitching in the east. This arrangement permitted the accomplishment of much more district work than in the past, and this is greatly appreciated by the farmers and agricultural organizations of the entire district. In addition, it has given the School valuable contacts which have been lacking heretofore. A separate report of the work in the two sub-districts in more detail accompanies this general school report.

Other extension work from the school includes the following:

School Fairs.—During 1939 the number of school fairs held under the supervision of the Vermilion School was approximately the same as in previous year. Of 42 organized fairs, 41 were held as scheduled. Centres discontinued were Sedgewick, Donnelly and Smoky Lake, whilst new centres were established at Derwent and New Sarepta.

Seeds were distributed to 6,848 pupils in 452 rooms. Exhibits at all fairs totalled 28,953, or an average of slightly over 700 exhibits per centre. This figure represents a decrease of approximately 15% in the total number of exhibits as compared with 1938. Extremely poor conditions for the raising of garden products in a good many districts resulted in a very thin exhibit of flowers and vegetables. Generally, speaking interest seemed to be well maintained.

As a result of frequent criticism that the very small children were, in a good many cases, unable to prepare for themselves many of the exhibits in the Agricultural section, seeds were not distributed this year to pupils in Grades I, II and III. Children in the primary grades were thus excluded from entry in classes 1 to 85. Teachers and parents generally approved of the ruling, but felt that for the most part children of 9 years should be included, regardless of grade.

A minimum of 50 points was set for the winning of the School Fair Short Course offered to the boy and the girl obtaining the highest total at each centre. It is evident that this ruling has set a much more desirable standard.

Legume Cultures.

The production of pure cultures for the inoculation of the seed of legume crops was resumed in the spring of 1935, and each season the demand is increasing. This year some 5,100 cultures were sent out, being distributed to all parts of the Province. By arrangement with the Field Crops Branch, the cultures are available at a special rate for the municipalities taking advantage of the Dominion-Provincial Forage Crop Policy. A single culture is sufficient to treat one bushel of seed, and is available to farmers at a cost of 35c postpaid. About 80% of the production is used for alfalfa and sweet clover. Cultures are provided also for the ordinary clovers, field peas, sweet peas, beans and vetch. They are prepared through the months of March to June, inclusive, by the Instructor in Bacteriology.

Alumni Association.

Membership in the Alumni Association continues to be very encouraging. As in past years, the association held two reunions, a two-day summer meeting in July and a fall meeting and dance in the early part of November. An exceptionally good attendance marked the latter event which was, without doubt, one of the most successful gatherings in recent years.

Other activities of the association included the distribution to paid-up members of horticultural stock, regular publication of the Alumni paper, and the awarding of a \$30.00 scholarship to a first year girl toward expenses of the second year. An attempt has been made to get in touch with all former students of the School for the purpose of preparing an up-to-date card index. In addition, the

executive has prepared a list of all ex-students on active service in order that the School may keep in touch with them during their stay overseas.

Forage Crop and Fertilizer Tests.

Experiments with forage crops on alkali lands and with commercial fertilizers on the grey wooded soils were conducted at a number of points, and are reported in some detail under section "Experimental Plots and Agronomy".

Experimental Plots, Agronomy, Horticulture.

The policy of the Department for the year 1939 has been the same as in the previous year, namely, to demonstrate the various adapted farm crops along with cultural practices which appear most suitable to the district and, at the same time, by experimental methods to add fundamental information towards solving some of the crop problems of northern and central Alberta. Some of the problems in which we are interested are briefly outlined.

Varietal Reaction to Fertilizers. — Four wheat varieties, Thatcher, Red Bobs, Marquis and Garnet, have been grown on summerfallow in replicated plots with three fertilizer treatments at Bon Accord, Waskatenau, Hairy Hill, Mannville and Elk Point. The plot treatment consisted of 40 pounds per acre of 15-20 ammonium phosphate, sweet clover ploughed down in 1938, the two in combination and straight summerfallow. Yield data on these plots is now available, although statistical analysis has not yet been completed. The Field Crops Department of the University are continuing with protein determinations, also milling and baking tests with the wheat from each plot. It is our objective to determine the effect of the fertilizers and cultural treatments on the quality of the wheat and flour as well as the direct effects on yield alone. We are greatly indebted to Dr. Neatby and Dr. McCalla for their assistance and helpful suggestions in conducting the yield trials in this experiment.

Re-seeding Low-lying Land.—In the summer of 1938 three low-lying unproductive pasture areas infested with wild barley were broken and seeded in June, 1938, to various forage crop mixtures. During the past summer yields of the grass-legume mixtures were obtained and were exceedingly gratifying, producing on the average five times as much as the native grasses and far exceeding them in quality. Legumes and grasses somewhat resistant to alkali, namely, sweet clover, brome, crested wheat and slender wheat grass, appeared most promising.

Varietal Tests.—New promising varieties of cereals and forage crops are tested in rod row nurseries at the Vermilion Station. Emphasis is being placed on earliness in wheat, and smut resistance combined with other desirable agronomic characters in oats. The majority of these tests are in co-operation with other agricultural institutions such as the University of Alberta, Central Experimental Farm, Ottawa, and the United States Department of Agriculture. We believe that this part of our programme is extremely valuable in that the relative merits of many varieties in the north-eastern section of the Province should be determined by actual trial in the neighbourhood rather than to accept information from more distant and unlike areas.

Field Days.—Those relative to farm crops have on the whole been well attended. Special mention should be made of a municipal council meeting at a forage plot on the farm of J. E. Findlay, Mannville.

Horticulture.—Many of the crabapple, apple and small fruit selections received for testing from Brooks, passed their first winter remarkably well. We anticipate that from these even better adapted varieties will eventually be developed. Late June frosts proved very damaging to our fruit crops in 1939. During 1939 a number of new crabapples, apple, raspberry and currant varieties were added to our nursery.

REPORT OF THE DEMONSTRATION FARM, OLDS

(WALTER ROSS, *Manager*)*Crops.*

The spring of 1939 was a little drier than usual, which made conditions very good for seeding. We got all our grain crops seeded in good shape. The weather stayed dry for quite a spell, then we had very heavy rains, just a little too much for the lower lying land. The hay crops made a wonderful recovery after the late rains.

We put up 100 tons of exceptionally good hay. The weather was ideal through haying, so all the hay was put up in good condition. We had different mixtures of hay, one mixture consisting of timothy, alfalfa, and red clover. Another mixture was brome grass and rye grass. Another field was alfalfa and a little bit of timothy. The field mixed with red clover yielded an excellent crop of hay. We had no winter killing. We put up 100 tons of ensilage and 15 tons of greenfeed, all of oats.

Our pasture fields held out very well, but we were very short of pasture before harvesting was completed. We had good weather throughout harvest, and got all our crops threshed before the snow-storm. We had a field of oats on the south farm that went 107 bushels to the acre, and a 40-acre field of barley yielded 76 bushels to the acre.

Altogether we threshed 8,904 bushels of oats, 3,877 bushels of barley, and 150 bushels of flax. This will give us sufficient feed for the coming year. We got considerable summerfallow done this year, and it is in very good condition for next year's crop.

Live Stock.

The Ayrshire herd has done very well this year. We have had one two-year-old heifer qualify with 7,620 pounds of milk and 320 pounds of fat in 305 days. We have 13 cows on test at present, all doing well.

We have raised 17 calves, 13 females and 4 males. We are keeping 5 heifer calves, and the rest have been sold for breeding purposes. There were also 2 Ayrshire bulls sold at the Edmonton Spring show, 1 two-year-old and 1 yearling. Another two-year-old bull was sold at Edmonton in November. We just had our first calf born this month by the new bull from Toronto. It is a heifer calf, very well marked, and shows exceptionally good breed characteristics.

All summer we have separated the milk, sold the cream at the local creamery, and used the skim milk for the pigs. During the school term we supply the dormitory with all the milk and cream we can spare.

The cows will all freshen between now and spring. They are all in calf by the young Toronto bull.

Shorthorns.—The Shorthorn herd is doing very well. So far we have had 5 bull calves and 6 females. The bull, Rothes 4th, is looking very good, and although his calves are not a good color, as a whole, they are good individuals. The addition of the Trame,

Switzer and McAllister heifers, also the Yule and E.P., have made a great improvement to our herd. The two bull calves from Trame are doing exceptionally well. We have 7 females and 3 young bulls for sale at present.

Hogs.—We have had a great year for hogs. They have all done well, and both boars and gilts sold at a good price, with the demand still very good for breeding stock. We have 20 sows to farrow between now and May. We will have them come in about four sows each month. We have had 2 sows farrow this week, 1 with 11 the other with 10 pigs. That is the first we have had in our new brooder house. I am sure it is going to be quite a success. Our fall litters have done very well, and within the next two or three months we will have a choice lot of gilts for sale, also 8 young boars.

Sheep: Hampshire.—We keep cutting down on the sheep from year to year as we are very short of pasture. We have sold the rams and ewes at a good average price. There are 15 ewes to lamb in the early spring. That should give us all we can accommodate here for the next year.

Horses: Percherons.—This has been a successful year with the horses. Sales consisted of 4 mares in foal by "Chief Laet," 1 three-year-old stallion, and 2 geldings. We have raised 6 foals, all being very good individuals, by "Chief Laet". There are 3 brood mares for sale and 1 rising three-year-old stallion. We have 4 rising two-year-old stallions, 2 of which can be sold in the spring. The other 2 can be carried over another year. There are 6 of the mares in foal again this year.

As in 1938, we pastured a lot of pure-bred mares from Percheron breeders all over the Province. These mares were all pastured on the south farm. We have had very good luck with them. All were shipped home safely, with no colds or sickness of any kind.

Most of our field work has been done by tractor this last year, but we also work horses when at all possible. The tractor gave us very good service. Repairs have been practically unnecessary. We use it in the winter for cutting and grinding feed, also for hauling feed from the south farm.

We have had a lot of new fences put up this year. There is still quite a bit more fencing to do. The addition of the new hog barn and brooder have been of great benefit to the farm. There have been a lot of hog raisers here to look the building over, and they think it is quite an improvement over the older type of buildings.

The field days that were held last June were a great success and very educational to the people as a whole. With the improvement in our live stock, we should have a bigger and better display next summer. I know there will be a lot of breeders looking forward to it, and it gives us great pleasure here to be able to put the stock out looking good.

Comparing the crops and the increase of live stock, it has been a very satisfactory year.

REPORT OF THE DEMONSTRATION FARM, VERMILION

(D. A. ANDREW, *Manager*)

The area of land operated was approximately 1,200 acres, 320 of which were rented from the Rev. Stanley Scott.

During the season, 98 acres of raw land was brushed, broken and worked down, ready for crop next season.

In operating the farm the two main objects are: first, to provide feed for the live stock maintained for class-room purposes and sale to farmers and breeders in the Province; second, to study forage crops under actual farm conditions.

All the large plot areas laid down in previous years were continued. The main item of interest in these was the excellent showing made by sweet clover as compared with other years. The early moisture appeared to greatly stimulate growth, with the result that we had a good supply of forage for silage and hay. Again the advisability of a diversified cropping system was demonstrated. The usual areas in the rotations were seeded to grass and clover. All the new seedlings—45 acres in all—went into winter in excellent condition. During the season 79 acres were summerfallowed in the regular way and 26 acres of sod was plowed and worked down immediately after the hay crop had been removed.

No noticeable difference appeared in the crops where the sod had been broken the previous season with a mould plow or a one-way disc.

The oats were a better crop on the first crop following new broken sod than they were on the second crop following fall breaking of alfalfa.

In our mixed tame grass pastures we found Kentucky Blue and Creeping Fescue very palatable, although Crested Wheat appears to have heavier growth.

Commercial fertilizer was applied to some areas in our pastures, but so far we have had no appreciable results. Alfalfa and Brome meadows yielded about 1½ tons per acre; Sweet Clover and Brome about 1¾ tons per acre, and pure Crested Wheat and Brome about 1 ton per acre.

Grain Crops.

Approximately 8,000 bushels of oats were threshed from 200 acres, 500 bushels of barley from 22 acres, and 50 bushels of flax from 10 acres. No wheat was grown. Thirty-five acres of oats were used as green feed, with an average yield of 1 ton per acre. Five acres of sunflowers yielded approximately 5 tons per acre.

Horses.

At present there are 27 head, 22 of which are Clydes either registered or eligible for registration. During the year 2 high quality registered Clyde mares were purchased, also 1 saddle mare. Fifteen head of horses were sold. These consisted of 3 registered Clyde mares, 3 grade mares and 9 geldings. Six foals were raised during the year. Except for an outbreak of distemper during the fall, the health of the horses has been good, the only death

being a 33-year-old gelding that was destroyed in the fall. Eleven mares were bred to Craigie Winsome Lad, 1 to Forest Favourite and 1 to Sovereign Favourite. A yearling cross-bred filly gives promise of making a very desirable hunter.

Cattle.

Shorthorns.—At present there are 30 head. During the year 11 head of females and a bull calf were purchased. These were all cattle of good quality and breeding, and have raised the general quality of the herd. During the year 5 bulls and 7 females were sold. Eight calves were born, of which 6 were bulls. Included in the list sold is the herd bull Princeton Quaker, sold to Mr. Clement Wildman, of Glaslyn, Saskatchewan.

Angus.—At present there are 33 head. During the year no purchases were made, but 3 bulls and 1 heifer were sold. Fourteen calves were born, 7 of which were bulls. Bandolier's New Deal 2nd, the bull imported last year, is proving an excellent breeder.

Hogs.

Only Yorkshire hogs are kept. At present we have 6 sows that have already raised litters and 9 gilts bred to farrow during the winter. This is a considerable increase over the number kept in past years. During the year 16 boars and 14 gilts were sold for breeding purposes. Five sows were entered in the Advanced Registry, and 4 litters are now in the feeding station. The other litter will be ready to go early in January.

The Department added greatly to our hog equipment by building a new Danish type hog house, 54×34 ft., with a hexagonal brooder house attached. Already six litters have been reared in it, and the results have been excellent. We have sows bred to farrow in February, March and April, so will by spring have more detailed information as to its cost of maintenance, etc.

Eighty-five sows were bred for farmers during the year. At present our breeding herd is headed by the boar, Maple Lodge Sardis, bred by Mr. Wilkinson, of Alliston, Ontario. Four high quality gilts were also purchased from outstanding herds in the Province. This herd is now in much better position than ever before to supply high-class breeding stock to the farmers of the Province.

Sheep.

Only Suffolk sheep are kept. The flock now consists of a University bred ram and 18 breeding ewes. Last year 43 lambs were dropped, 33 of which were reared—20 males and 13 females. Six shearling rams, 1 ram lamb, 7 registered ewes were sold for breeders. Eight ram lambs are being carried over for sale next year. Four ewe lambs are being retained for our own flock.

Poultry.

No attempt was made toward the production of hatching eggs or baby chicks. The flock kept for class-room purposes and egg production consists of 100 White Leghorn Pullets and 35 Yearling Rhode Island Red Hens.

Apiary.

In the fall of 1938, 15 colonies were packed for winter. Of these, all but 1 survived. Four packages were purchased and

placed May 1st. During July we made 27 neucli for wintering experiments, therefore 45 colonies have gone into winter, all in various kinds of outside wintering cases. So far the single wintering case appears to give us best results. No artificial feeding was done. The scale hive made a gain of 202 pounds up to September 1st.

Machinery.

The purchase of a new rubber-tired tractor, a 4-bottom plow, 12 ft. cultivator, 10 ft. tandem disc, and a 6 ft. one-way disc have greatly increased the efficiency of our field machinery, and made it possible to reduce our crop production costs. The addition of a new seed drill and binder would bring our machinery in line with modern grain growing requirements.

REPORT OF THE PROVINCIAL HORTICULTURAL STATION,
BROOKS(P. D. HARGRAVE, *Assistant Superintendent*)

Each year shows progress. We are just beginning to make use of the work that was done better than 50 years ago in horticulture. Improvements over the varieties of fruits and vegetables that were the result of that first work will gradually be replaced with varieties just as hardy, but of higher quality.

In the endeavour to encourage fruit growing there might be a tendency to relax the emphasis that we must continually place on shelter-belt plantings, their management and improvement. Without shelter-belts, fruit growing will prove a hopeless task. There is no surer way of improving a farm and making it a better place to live than to plant trees, and first trees to be planted should be shelter-belt trees.

During the past few years the development of the farm as a place to live rather than a money making proposition has increased the farm families' interest in horticulture. This increase in interest has been felt markedly at the station by the increase in visitors and in correspondence by way of inquiries, and by the enthusiasm at the shows.

The following brief report is a summary of some of the more important work being carried on in the interest of horticulture by the station staff and how they are trying to take it to the people.

Climate.

Climatic conditions of 1939 were very favourable to the fruit crop. A low of -43°F. was experienced in February. The last killing frost occurred on the night of April 24th, being followed by a frost-free period of 154 days, 18 days longer than the 20 years average, with tender plants being killed on September 27th. Some low-lying places were affected by a slight frost on May 28th. Before the last frost and after the first frost, fine weather was experienced and outside work was carried on. The early spring and warm April gave earlier growth than any experienced at the station. The warm windy weather of May put the soil in good condition for planting, but later rapid loss of surface moisture made for poor germination. This forced early irrigation, which was started on May 15th.

The first irrigation was just finished when rain started, and 6.05 inches fell during the early part of June. The rain along with low temperatures, a mean of 55° , set back everything but fruit and cool weather crops. This period of cold, wet weather was followed by dry windy weather during July, August and September, with only 1.07 inches of rain falling. This required frequent irrigations with a resultant heavy weed growth.

Tables of the 1939 temperatures and rainfall and of the first and last frost, length of growing season and minimum and maximum temperatures since 1916 follow:

DEPARTMENT OF AGRICULTURE

TEMPERATURE RECORD FOR THE YEAR

Month.	1939					
	Max.	Min.	Mean	High	Low	Precip.
January	32.1	13.7	23	42	-21	.44
February	15	-4.5	5	43	-43	.61
March	33.5	11.5	24.1	73	-25	1.15
April	59	32	45.5	91	13	.45
May	71.5	41	56.5	93	28	.70
June	66.08	44.8	55	82	35	6.05
July	85.7	54.5	70	99	47	.47
August	82.5	49	64.7	96	38	.24
September	70.6	40.6	55.5	88	26	.36
October	52	28	40	72	-9	1.27
November	53.7	28	41	65	15	.04
December	41	21	41	68	-11	.61
						12.39

DATE OF FIRST AND LAST KILLING FROST AND LENGTH OF GROWING SEASON

Year	Date of Killing Frost		Length of Growing Season	Max. and Min. Temperatures		
	Last in Spring	First in Autumn		Month	Max. Month	Min.
1916				July	92	January -51
1917				July	100	February -51
1918				July	103	February -46
1919				July	104	December -41
1920	June	Sept. 19	110	July	103	January -51
1921	May 28	Sept. 2	96	August	105	March -31
1922	April 19	Oct. 11	163	August	100	December -41
1923	May 15	Sept. 22	129	July	98	February -41
1924	May 8	Oct. 10	154	July	99	December -56
1925	May 11	Sept. 30	141	July	99	January -34
1926	May 8	Sept. 16	130	July	102	December -35
1927	May 10	Sept. 20	132	July	92	February -45
1928	May 4	Sept. 8	126	August	99	January -48
1929	May 15	Sept. 6	113	July	100	January -60
1930	April 21	Oct. 12	173	July	100	January -40
1931	May 22	Sept. 23	123	July	110	December -20
1932	April 26	Oct. 4	160	August	99	February -35
1933	May 29	Sept. 26	138	July	103	February -32
1934	May 29	Sept. 23	116	July	97	November -32
1935	May 8	Sept. 20	134	July	99	January -38
1936	May 12	Sept. 14	124	July	99	February -47
1937	May 6	Sept. 24	140	July	100	January -40
1938	April 28	Oct. 14	169	July	101	December -37
1939	April 25	Sept. 27	154	July	99	February -43

Fruit Season.

Approximately 32 tons of fruit were picked at the station during the season. This consisted mainly of plums, crabs and apples. Pears, grapes, strawberries and other small fruits yielded well. A large crop of walnuts, butternuts and horse-chestnuts was harvested. A ready sale was found for 25 tons of fruit, or 2,500 20-pound crates. During the first few days after the declaration of war, due to sugar scare, sales fell off. This occurred at the peak of the picking season, with the resultant spoilage of about six tons of plums. The fruit was not a total loss, however, as the seed was salvaged and will be used for budding stocks.

The earliest blossom period on record was experienced. Pears were in full bloom on April 28th, and some plums came into bloom on April 29th. Weather during full bloom was perfect, and fruit was well set before the slight frost of May 9th, so no damage was apparent.

The heavy crop of fruit, particularly that of high quality varieties, after the low temperature of -43° Fahrenheit experienced during the month of February was indeed encouraging. It questions the widely held belief that low temperature is the cause of winter-killing, and places more stress on early growth of flower buds followed by severe frosts as the more likely cause.

Seventy-seven varieties of crabs and apples, 76 of plums and cherries, 16 of grapes as well as pears, walnuts, butternuts, horse-chestnuts and many small fruits, bore heavily. Every year sees a greater variety coming into bearing.

Orchards.

When seedling orchards have fruited and promising individuals have been propagated, this planting is destroyed, and is replaced. Two of these new plantings, including 1,037 seedlings, were set out during the spring; 191 new varieties of apples and crabapples, propagated at the station, were added to the test orchard, making a total of 290 varieties in the one orchard; 92 varieties of station propagated plums and cherries were set out in their respective test orchards, as well as many apricots and pear varieties. A heavy pruning programme has improved the appearance of some of the older plantings, 3 of which have been removed completely so that the areas can be replanted.

Introductions numbered 157 new fruit and ornamental varieties. Seed of 132 species was received from foreign countries. About 3,300 spruce were set out, and 3 new shelter-belts were started. A heavy planting programme will be necessary in the spring of 1940. There are 3,000 seedlings, dug and heeled-in, requiring placing to grow to maturity.

The usual propagating was carried out, with 4,200 buds being placed. The early setting of plum bark, July 25th, was noted particularly. Poor success has attended plum propagation during the past few years. This early setting of the bark is the possible solution. Budded stock for sale to nurserymen and distribution through agricultural organizations have been dug and heeled-in. They number about 3,300.

Stratification and seedage have been carried on extensively.

Test Plots.

Varietal testing of corn, beans, tomatoes, potatoes and onions was carried out extensively. Due to adverse conditions, the vine tests failed to make suitable progress.

Tomato Tests.—The tomatoes test plot was very uniform. The cool, wet period retarded the set fruit, but a good yield from early varieties was obtained. The season helped markedly in making newer selections stand out and show their superiority.

There were 35 varieties in the 1939 test. The 5 leading varieties in total yield of ripe fruit to September 13, 1939, are all of recent origin, with the lowest yielder being Bison, which has been on the market for the longest time. The leading varieties for the past three years are listed:

Early Varieties on Sept. 10th, 1937	Early Varieties on Sept. 10th, 1938	Early Varieties on Sept. 10th, 1939
N.D. 216-2-3	Bison BS	Red Skin
Bison	Abel	Allred
N.D. 209-2-10	Princess Mary	Selection 16-37
Red River	Red River	Drought Resistant
Golden Bison	N.D. 209-2-10	Bison
N.D. 215-P-2	N.D. 216-2-3	M.D.A.C.S.P.T.

NOTE.—Earliana, the variety carried in the tests from year to year for yield comparison, placed 15th out of 19 in 1937, 15th out of 29 in 1938, and tied for 29th place with two other varieties out of 35 in 1939.

The results show that consistent progress has been made in tomato improvement. Many of the old varieties as represented by Earliana are still widely used, and it will take time to introduce the earlier and better types.

Onion Tests.—In the hope of finding the most suitable variety of onion for winter storage, from the many types available, a preliminary test plot was carried on. It contained 12 varieties, 9 of

which were registered strains. A marked difference was noticed in the yielding and maturing ability. The selection of Ailsa Craig, developed at this station, proved to be the heaviest yielder, and Yellow Sweet Spanish, an Eastern variety, was next. Owing to the short season in Alberta, earliness of maturity is of great importance, and the variety Australian Brown proved best from this standpoint, but placed 5th in yield.

Potato Varieties.—The potato test plot was again carried in a manner similar to past years, with greater care being given to clean seed and disease notes. Although all the seed used in the plots was free from net necrosis at planting, a high percentage of the hills showed traces of this disease at harvest time. No definite conclusion can be drawn, but there seemed to be a tendency for varietal resistance or susceptibility to this trouble.

Co-operation with the Dominion Entomological Branch in setting up and reporting on the insect migration was given. Their insect trap was set beside the test plot.

It is of interest to note that the newer varieties are standing up well from the yield standpoint. They are also of the highest marketable quality. A list of the highest yielding varieties follows: Netted Gem, Katahalin, Chippewa, Snyder, Golden Wonder, Columbia Russet, Early Ohio, Carter's Early Favorite, Maison, Irish Cobbler.

Comparison with past years can be made by referring to the 1938 report.

Bean Test Plot.—About thirty samples of green and wax beans were grown on the demonstration plots, and proved of great interest to visitors. A plot such as this impresses the average home owner with the value of good seed of good varieties.

A few varieties showed traces of bacterial blight, a seed born disease common in this Province. It was not as conspicuous as in other years.

Large increased plots of dry beans and pea varieties were grown, and even the latest maturing of these ripened readily. These varieties will prove of great value during war years, due to our ability to produce rather than import this line of foodstuffs, as has been the general practice.

Corn Tests.—Twenty varieties of corn were grown. This included sweet, dent, flint, hybrid and popcorn. None of the American hybrid types proved early enough for our conditions, but the hybrid between Kingscrot and 12-rowed Golden Bantum, local cross, proved very promising. Gehu, Minn No. 13 and Northwestern Dent proved the earliest of the feed corn and Purple Pop the earliest of the popcorn.

Breeding Work.

The greenhouse was used for the first time in breeding work, and although space was inadequate, some progress was made. The greenhouse enables us to work with high quality but tender varieties of fruit trees grown on dwarfing stocks in tubs. These tubbed trees are stored in the root cellar during the severest weather each winter until their dormancy period has been overcome, when they are removed to the greenhouse for crossing work.

In conjunction with the fruit breeding work, a preliminary programme on varietal dormancy was commenced. This was carried on with 25 varieties in an attempt to determine their dormancy period, particularly in respect to their flower buds.

A large number of commercial strawberry varieties have been crossed amongst themselves and with wild varieties. From the resultant seedlings, selections more suitable to Alberta conditions are looked for. Similar crosses in raspberries have been made, and hardiness is one of the looked for characters.

The segregating plots resulting from the tomato crossing work, done in previous years, showed great promise, and many early dwarf selections were made. No new selections were made from this year's hybridizing.

Extension Work.

During the past year greater emphasis has been placed on taking the information gained at the station to the people of the Province. Field days, demonstration plantings and lectures have increased in number. Members of the staff assisted at 16 field days and short courses in other parts of the Province and organized and directed 7 field days at the Horticultural Station. Four orchards were placed with demonstration plantings and 3 planted for future demonstration work. The demand for farmstead plans is steadily increasing, and promises to become somewhat of a burden. It is, however, to the home-maker a very necessary assistance.

The most important field day at the Station was that arranged for the Extension men and heads of the Branches of the Department of Agriculture. Many horticulturists and nurserymen attended this gathering. The main object was to convey to these men what has been done and what can be done with fruits in the Province, and to introduce them to the work of the Horticultural Station.

The policy of placing test orchards in each district of the Province over a period of years has been developed. These test orchards will yield further information as to the suitability of varieties and will also give the District Agriculturist demonstration orchards in their territories for educational purposes.

Assistance has been given to agricultural and horticultural organizations by means of premiums and prizes. Extensive exhibits were taken taken to both the Calgary and Edmonton Horticultural Society Shows, where they were enthusiastically received. Assistance was also given to Brooks and Rainier Horticultural Societies.

Conclusion.

During the past year the Station experienced another abundant crop, in spite of the low temperature of the past winter. The number of varieties on the Station grounds now number some 1,150. This is an increase of 157 varieties of fruits and ornamentals over last year. Some test plots reached their final years and others have been started. An increase in fruit breeding has been accomplished, and many new varieties of seedlings have been set out. The number of fruit selections made at the Station for further trial now

number 26. The most promising addition to this list is an Opata seedling, known as Brooks No. 24.

The new equipment at the Station has improved working facilities. Increased co-operation with the Extension Branch is facilitating the dissemination of horticultural information.

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OCT 10 '63		Due Cam MAR 28 '92
APR 30 '83	R	Due Cam MAY 09 1992
APR 29 RETURN		Due Cam JUN 17 1992 R
		Due Cam AUG 11 1992
		Due Cam OCT 14 1992
Due Cam MAY 31 1990		Due Cam OCT 18 RETURN
Due Cam JUL 09 1990		JUL 10 RETURN
Due Cam AUG 21 '90		RETURN NOV 02 '00
Due Cam OCT 02 '90		
SEP 19 RETURN		
Due Cam JUL 03 '91		
Due Cam AUG 14 1991		
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